



Integrated Irrigation Management Solutions



BERMAD Irrigation

Product Guide

Effective: 2025



Water Control Solutions



Contacts

USA

BERMAD INC Irrigation Division

3816 S Willow Ave, #101
Fresno, CA 93725
phone: 559 791 1314
fax: 800 839 3884
info.us@bermad.com
www.bermadinc.com

BRAZIL

BERMAD Brasil

Rua Paulo Rebessi, 962 – Cidade Jardim
CEP: 13614-260 – Leme – SP
Telefone: +55 11 3074 1199
www.bermad.com/br

MEXICO

BERMAD MEXICO AGRICULTURA S.A. DE C.V.

Carretera Mexico Toluca Km 53.5
Bldv Doña Rosa 2C
Zona Industrial Lerma
Lerma Edo. De Mexico
Tel: 728 1021600
Tel: 01 800 2237623
Email: info@bermad.com
www.bermad.com/mx

EUROPE

Spain

BERMAD Europe S.L.

Calle Comercio, 1 – Nave 22
08780 Pallemà, Barcelona
TEL: +34 932 225 125
FAX: +34 936 633 134
Bermad.eu@bermad.com
<https://www.bermad.com/eu>

Italy

BERMAD Italy S.R.L.

Via XXII Marzo 32
Gallarate (VA) 21013
TEL: +39 0331 301879
FAX: +39 0331 667693
info.it@bermad.com
<https://www.bermad.com/eud.com/eu>

France

BERMAD France S.A.S.

141 Quai de Bonneuil
94210 La Varenne Saint –Hilaire
TEL: 0800 100 308
TEL: +34 932 225 125
bermad.srl@orange.fr
<https://www.bermad.com/fr>

CHINA

BERMAD China Co. Ltd.

Building 7, Number 1. Lane 123,
East Huancheng Road
Fengxian District 201400, Shanghai, China
TEL: +86 21 544 09950
FAX: +86 21 544 09960
info.cn@bermad.com
www.bermad.com.cn

AUSTRALIA

BERMAD Water Technologies Pty

26 Brand Drive
Thomastown VIC 3074
TEL: +61 3 9464 23745
FAX: +61 3 9464 2382
Sales.Au@bermad.com
www.bermad.com.au

INDIA

506, Deron Heights, Opp Hotel Mahabaleshwar,

Baner, Pune- 411045
Maharashtra,
Indiaphone: +91 (20) 27293213
India@bermad.com

ISRAEL

BERMAD CS. Ltd.

Kibbutz Evron, 2280800
Phone: +972 4 985 5311
Fax: +972 4 9855356
www.bermad.com

SOUTHEAST ASIA

CITILINK Warehouse Complex

102E, Pasir Panjang Road, #06-02,
Singapore 118529

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New from BERMAD

OMEGA

BERMAD Cloud based
Irrigation Control Solution



Omega is BERMAD's advanced cloud-based irrigation controller, offering anywhere-anytime connectivity to your irrigation system using **BERMAD Cloud** Web access and Smartphone App.

Omega is a standalone battery-operated controller, designed specifically to provide user-friendly and cost effective solution for irrigation systems, water distribution, data acquisition and pre-paid systems (districts & consortiums)

BERMADIZE your water flow system

BERMAD is an expert in water flow management. We design, manufacture and supply products and solutions to enhance and protect water systems. Now you can remotely regulate water delivery, monitor performance, and troubleshoot any issues – anywhere, anytime.



Electronic Register

Bermad electronic register is a state of the art technology ideally suited for all applications. BERMAD's knowledge offers consumers of all types a powerful and unique solutions designed to enhance standard mechanical water meters, providing integrated communication capabilities. The smart electronic register combines encapsulated and weatherproof housing with a reliable and quality design. Our goal is to enhance our customers' ability to improve their accuracy, increase metering sensitivity, conserve energy and conversely reduce maintenance and cost.



BERMAD Electromagnetic Flow meters

BERMAD Electromagnetic Flow meters are robust state of the art flow meters for irrigation:

- They are well-suited for the whole range of irrigation water qualities
- They include integrated alarm for partially filled pipeline
- With No Moving Parts they provide Pipe-like flow path
- Their DC low power design is ideal for in-field battery operation
- They are highly accurate even at very low flow-rate



We, in BERMAD, believe that any need should have a solution.
Didn't find the exact product you need ?

Please contact our application engineers and we'll be more than happy to provide you with the best tailor made solution we have.



IR-100 Series hYflow



The BERMAD hYflow IR-100 Series is at the leading edge of control valve design, providing a composite valve that is free of the typical limitations associated with standard control valves.

A unitized flexible super-travel diaphragm & guided plug provide a significantly 'look through' passage resulting in accurate & stable regulation and ultra-high flow capacity.

The hYflow unique design allows on-site adaption to a wide range of end connection types and sizes.

Available in sizes:

Oblique (Y) - 1½", 2", 2"L, 2½", 3", 3"L, 4", 4"L, 6"R & 6";

Angle - 2", 3", 3"L, 4"

"T" & Dual (D) patterns - 3"

For PN16 rating, IR-100HP available in oblique (Y) pattern in diameters of 1½"-6"R.

for other requests consult Bermad

Features and Benefits

- Hydraulic Control Valve
 - Line pressure driven
- Engineered Composite Material Valve with Industrial Grade Design
 - Adaptable on-site to a wide range of end connection sizes and types
 - Articulated flange connections eliminate mechanical and hydraulic stresses
 - Highly durable, chemical and cavitation resistant
- hYflow 'Y' Valve Body with "Look Through" Design
 - Ultra-high flow capacity - Low pressure loss
- Unitized Flexible Super Travel Diaphragm and Guided Plug
 - Accurate and stable regulation with smooth closing
 - Requires low actuation pressure
 - Prevents diaphragm erosion and distortion
- User-Friendly Design
 - Simple in-line inspection and service

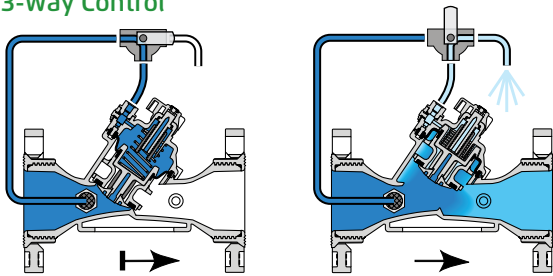
Typical Applications

- Irrigation Control Head
- In-Field Control Head
- LPS - Low Pressure Systems
- Energy Saving Irrigation Systems
- Automated Irrigation Systems



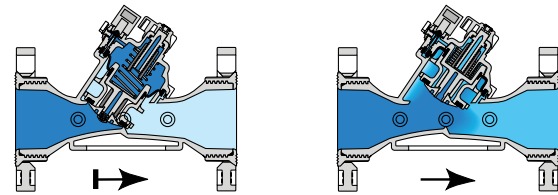
Operation Modes (On/Off)

3-Way Control



Line pressure applied to the control chamber of the valve creates a hydraulic force that moves the valve to the closed position and provides drip tight sealing. Discharging pressure from the control chamber to the atmosphere causes the line pressure under the plug to open the valve.

2-Way Control



Line pressure enters the control chamber through the internal restriction. The closed solenoid causes pressure to accumulate in the control chamber, thereby shutting the valve. Opening the solenoid releases more flow from the control chamber than the restriction can allow in. This causes pressure in the control chamber to drop, allowing the valve to open.

Technical Specifications

Available Patterns & Sizes:

Oblique (Y) - 1½"-6"; DN40-DN150
Angle (A) - 2", 3", 3"L, 4"; DN50, DN80, DN80L, DN100
"T" (T) & Dual (D) patterns - 3"; DN80

Available End Connections:

Threaded:

Female BSP-T/NPT (1½"-3"L; DN40-DN80L)

Male BSP-F (2" & 2½"; DN50 & DN65)

Flanged (Fl): 3", 3"L, 4", 4"L, 6"R & 6"

Universal composite or metal "Corona" ISO, ANSI, AS, JIS

PVC: 75mm, 90mm, 110mm, 2.5", 3", 4"

PVC "glue-in" adapters for cement welding

Grooved (Grv): 2", 3", 4"

Plastic grooved adapters

Pressure Rating:

10 bar ;150 psi (IR-100)

16 bar; 250 psi (IR-100HP)

Operating Pressure Range:

100: 0.5-10 bar; 7-150 psi

100HP: 0.5-16 bar; 7-250 psii

Temperature Range: Water up to 60°C; 140°F

Standard Materials:

■ Body, Cover and Plug:

Polyamide 6 & 30% GF 100HP: Reinforced Polyamide

■ Diaphragm:

NR (IR-100)

EPDM (IR-100HP)

■ Seals:

NR(IR-100)

EPDM (IR-100HP)

■ Spring: Stainless Steel

■ Cover bolts: Stainless Steel

Flow Properties

Size	DN	40	50	50	50L	65	80	80	80	80	80	80	80L	80L	100	100	100L	150R	150
Pattern	Inch	1½	2	2	2L	2½	3	3	3	3	3	3	3L	3L	4	4	4L	6R	6
		Y	Y	A	Y	Y	Y	A	T	TT	D	DD	Y	A	Y	A	Y	Y	Y
									One side	Two sides	One side	Two sides							
KV		50	50	50	100	100	100	85	95	130	90	200	200	190	200	190	340	340	400

$$\Delta P = \left(\frac{Q}{K_v} \right)^2$$

Kv = m³/h @ ΔP of 1 bar

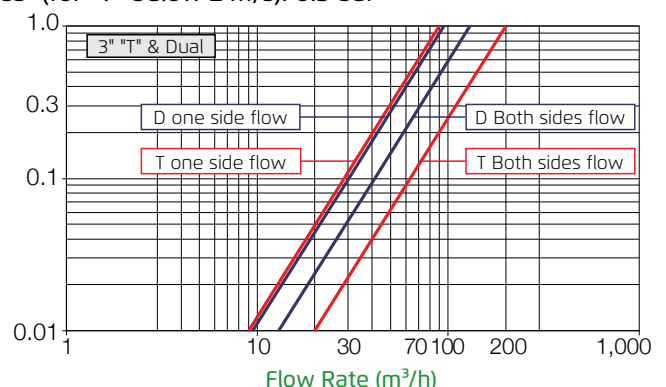
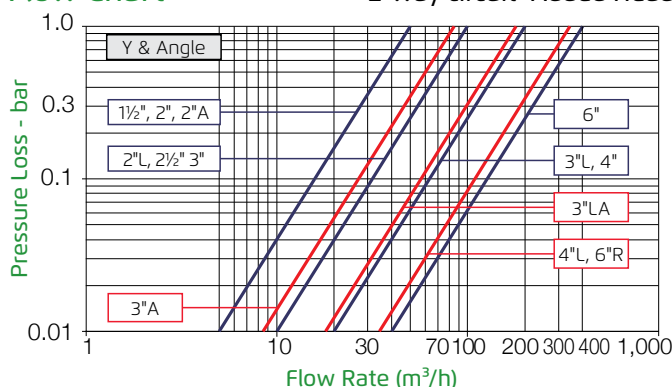
Q = m³/h

ΔP = bar

$$C_v = 1.155 K_v$$

Flow Chart

2-Way circuit "Added Head Loss" (for "V" below 2 m/s): 0.3 bar





Dimensions & Weights

Size Inch; DN	1½"; 40	2"; 50	2"; 50	2"; 50L	2½"; 50L	3"; 80	3"; 80
Pattern	Y	Y	Y	Y	Y	Y	Y
End Connections	Rc 1½ (BSP.T) 1½" NPT	Rc 2 (BSP.T) 2" NPT	G 2 (BSP.F) ---	Rc 2 (BSP.T) 2" NPT	G 2½ (BSP.F) ---	Rc 3 (BSP.T) 3" NPT	Universal Flanges Metal Plastic
L (mm)	200	230	230	230	230	298	308 308
H (mm)	173	173	173	187	187	199	244 244
h (mm)	40	40	40	43	43	55	100 100
W (mm)	97	97	97	135	135	135	200 200
CCDV (lit)	0.12	0.12	0.12	0.15	0.15	0.15	0.15 0.15
Weight (Kg)	1.1	1.2	1.2	1.47	1.47	1.6	4.4 2.5

Size Inch; DN	3"; 80L	3"; 80L	4"; 100	4"; 100L	4"; 100L	6"; 150
Pattern	Y	Y	Y	Y	Y	Y "Boxer"
End Connections	Rc 3 (BSP.T) 3" NPT	Universal Flanges Metal Plastic	Universal Flanges Metal Plastic	Universal Flanges 4"L; 100L 6"R; 150R Metal Plastic Metal	Universal Flanges Metal Plastic Metal	Grooved Ends Universal Flanges Plastic
L (mm)	298	308 308	350 350	442 442 470	442 442 470	480 504
H (mm)	278	317 317	329 329	340 340 377	340 340 377	198 286
h (mm)	60	100 100	112 112	112 112 149	112 112 149	100 143
W (mm)	168	200 200	224 224	226 226 287	226 226 287	475 475
CCDV (lit)	0.62	0.62 0.62	0.62 0.62	1.15 1.15 1.15	1.15 1.15 1.15	2x0.62 2x0.62
Weight (Kg)	3	4.6 3.7	7.4 4.6	13.5 10 16.5	13.5 10 16.5	11 12.5

Size Inch; DN	2"; 50	3"; 80	3"; 80L	4"; 100	3"; 80	3"; 80
Pattern	A	A	A	A	Dual	T
End Connections	Rc 2 (BSP.T) 2" NPT	Rc 3 (BSP.T) 3" NPT	Rc 3 (BSP.T) 3" NPT	Universal Flanges Metal Plastic	Rc 3 (BSP.T) 3" NPT	Rc 3 (BSP.T) 3" NPT
L (mm)	115	133 138 138	150 155 155	176 176	200	133
H (mm)	216	246 251 251	343 348 348	369 369	269	247
h (mm)	115	118 123 123	140 145 145	166 166	116	119
W (mm)	97	135 200 200	170 200 200	224 224	135	135
CCDV (lit)	0.12	0.15 0.15 0.15	0.62 0.62 0.62	0.62 0.62	2x0.15	0.15
Weight (Kg)	0.8	1.6 4.4 2.5	2.8 4.4 3.5	7.2 4.4	3.2	2.1

CCDV = Control Chamber Displacement Volume DC = Double Chamber Other End Connections adapters are available on request.
For dimensions and weights of adapters or valve with adapters please consult with customer service



IR

3"

120

55

Y

P

BP

4AC

PP

XZ

Size	End Connection
1½"	DN40 Female Threaded
2"	DN50 Female Threaded, Male Threaded
2"L	DN50L Female Threaded
2½"	DN65 Male Threaded
3"	DN80 Female Threaded, Flanged, Grooved, Glue in, Horn
3"L	DN80L Female Threaded, Flanged, Grooved or Glue in
4"	DN100 Flanged Grooved or Glue in
4"L	DN100 Flanged, Grooved
6"R	DN150 Flanged or Glue in
6"	DN150 Flanged or Grooved

Primary Features	Code
Basic Valve	105
Solenoid Controlled Valve	110
Solenoid Controlled TRIO Valve (2"-3")	11T
Pressure Reducing Valve	120
Pressure Reducing TOP PILOT Valve (1½"-3")	12T
Pressure Reducing & Sustaining Valve	123
Pressure Sustaining Valve	130
Differential Pressure Sustaining Valve	136
Quick Pressure Relief Valve	13Q
Level Control Valve	150
Level Control & Pressure Sustaining Valve	153
Flow Control Valve	170
Flow Control & Pressure Reducing Valve	172

Other primary features available on request.

Additional Features	Code
No Additional Features	00
Closing and opening speed control	03
Hydraulic Remote Control	50
N.C With Adjustable Hydraulic Relay	54X
N.C. with Hydraulic Relay	54
Solenoid Controlled	55
Modulating Horizontal Float	60
Bi-Level Electric Float	65
Green-App Control	4G
Internal Feed & Bleed*	N
TOP PILOT with 12-80 PSI adjusting scale & Spring	J2
TOP PILOT with 0.8-6.0 Bar adjusting scale & Spring	H2

* Internal Feed & Bleed options N1-N7 available according to specific Application Engineering definitions.

Pattern	Available Size	Code
Oblique	(all sizes)	Y
Angle	2", 3" & 3"L/4"	A
Tee	3"	T
Dual Actuated Tee	3"	D

Construction Materials	Code
Polyamid 6 & 30% GF	P

End Connections - Valve Body only (w/out Adaptors)		Code
Threaded	BSP-T Female Threaded	BP
	NPT Female Threaded	NP
	BSP-F, Male Threaded (2" & 2½" ONLY)	BS
Grooved*	Victaulic (4"L, 6")	VI
Horn	Inlet BSP x Outlet(s) Horn (3" Angle / Tee / Dual)	KB
	Inlet NPT x Outlet(s) Horn (3" Angle / Tee / Dual)	KN

End Connections - Valve Body with Adaptors***		Code
Flanged**	Plastic Flanges (3", 3"L, 4", 4"L, 6")	FF
	Plastic Flanges - NPT Threaded Body (3", 3"L, 4")	FN
	Metal Flanges - "Corona" (3", 3"L, 4", 4"L, 6"R)	CC
	Metal Flanges - NPT Threaded Body (3", 3"L, 4")	CN
PVC Cemented (glue-in)	PVC Inner Adaptors 75mmx3" BSP (3", 3"L)	BJ
	PVC Inner Adaptors 2.5"X3" NPT (3", 3"L)	NJ
	PVC Adaptors 90-110mm, BSP Threaded Body (3", 3"L)	T1
	PVC Adaptors 110-125mm, BSP Threaded Body (3", 3"L)	T2
	PVC Adaptors 3"-4", NPT Threaded Body (3", 3"L)	T3
	PVC Adaptors 4", NPT Threaded Body (3", 3"L)	T4
*Grooved Adaptors	BSP Threaded Body (2", 2"L, 3", 3"L, 4")	BV
	NPT Threaded Body (2", 2"L, 3", 3"L, 4")	VN

* Complies with: ANSI C 606-81
** Complies with: ISO PN10, BST-D, ANSI 125/150, JIS K-10
*** For ordering the Adaptors separately see page 23
Inlet x Outlet end connection combinations available on request.

Voltage-Main Valve Position (When Solenoid De-Energized)		Code
24VAC - Normally Closed		4AC
24VAC - Normally Open		4AO
24VDC - Normally Closed		4DC
24VDC - Normally Open		4DO
12VDC - Latch Solenoid S-985 (3 Leads)		1DS
12VDC - Latch Solenoid S-982 (2 Leads)		2DS
9VDC - Latch Solenoid		9DS

Other electrical ratings available on request.

Tubing & Fittings	Code
Composite Tubing & Fittings (standard)	PP

Additional Attributes Unlimited Selection	Code
Servo (2/3-Way Control Loop)	b
3-Way Control Loop	X
Differential Pressure Duct (2"-4")	D
External Control Pressure	e
Flow Stem	M
Manual Selector	Z
Low Preset Pressure (below 2 bar)	2
Plastic Pressure Test Point	5
½" Anti Vacuum at Valve Downstream	7
Paddle Flow Control	t

Other additional attributes are optional. Please consult our customer service for further information.



Hydraulic Control Basic Valve

IR-105

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Y Plastic Flanges
	A	A Threaded
		A Plastic Flanges
	T	T Threaded
	D	D Threaded

Size	Pattern	Connection
3"L	DN80L	Y Threaded
		Y Plastic Flanges
4"	DN100	A Threaded
		A Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Y Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic FI/Grv



Variable End Connections (adaptors) available - see End Connection table

Hydraulic Control Valve

With Manual Selector

IR-105-Z

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Y Plastic Flanges
	A	A Threaded
		A Plastic Flanges
3"L	DN80L	Y Threaded

Size	Pattern	Connection
3"L	DN80L	Y Plastic Flanges
		A Threaded
4"	DN100	A Plastic Flanges
		A Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Y Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic FI/Grv



(*) Variable End Connections (adaptors) available - see End Connection table

(**) Prices refer to valves without flow stem. For additional flow stem price, see page 20

Hydraulic Control Valve

Normally Closed With Hydraulic Relay Control

IR-105-54-3W-X

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Y Plastic Flanges
	A	A Threaded
		A Plastic Flanges
	T	T Threaded
	D	D Threaded

Size	Pattern	Connection
3"L	DN80L	Y Threaded
		Y Plastic Flanges
4"	DN100	A Threaded
		A Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Y Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic FI/Grv



(*) Variable end connections (adaptors) are available - see end connection table.

(**) Prices refer to valves without flow stem. For additional flow stem price, see page 20



GreenApp Controlled Valve

Application Operated

IR-11T-4G-2W

Size	Pattern	Connection
2"L	DN50L	Y
2½"	DN65	Y
3"	DN80	Y

Size	Pattern	Connection
3"	DN80	A
		T
		D

Variable End Connections (adaptors) available - see End Connection table



Solenoid Controlled Valve

With 2-Way Internal Control & Trio Latching Solenoid

IR-11T-LS-N-2W

Solenoid S-392-T-2W, 9-20V/DC Latch

Size	Pattern	Connection
2"L	DN50L	Y
2½"	DN65	Y
3"	DN80	Y

Size	Pattern	Connection
3"	DN80	A
		T
		D

Variable End Connections (adaptors) available - see End Connection table



Solenoid Controlled Valve

With 2-Way Internal Control & Solenoid

IR-110-N1-2W

Solenoid S-390-2W

Size	Pattern	Connection
1½"	DN40	Y
2"	DN50	Y

Size	Pattern	Connection
2"	DN50	A

(*) Standard 24V AC. For other voltage, see Ordering Guide
Variable End Connections (adaptors) available - see End Connection table
(**) The prices refer to valves without flow stem.
For additional Flow stem price see page 20



Solenoid Controlled Valve

With 2-Way Internal Control & Trio Solenoid

IR-11T-N1-2W

Solenoid S-390-T-2W

Size	Pattern	Connection
1½"	DN40	Y
2"	DN50	Y
2"	DN50L	Y
2½"	DN65	Y
3"	DN80	Y

Size	Pattern	Connection
3"	DN80	A
		T
		D

(*) Standard 24V AC. For other voltage see Ordering Guide
Variable End Connections (adaptors) available - see End Connection table





Solenoid Controlled Valve

With 2-Way Internal Control & Latching Solenoid

IR-110-LS-N-2W

Solenoid S-392-2W, 9-20V/DC Latch

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded

Size	Pattern	Connection
2"	DN50	A Threaded

Variable End Connections (adaptors) available - see End Connection table



Solenoid Controlled Valve

With 3-Way Control

IR-110-3W-X

Solenoid S-390-T-3W

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Plastic Flanges
	A	Threaded
		Plastic Flanges
	T	Threaded
	D	Threaded

Size	Pattern	Connection
3"L	DN80L	Y Threaded
		Plastic Flanges
4"	DN100	Y Threaded
		Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic FI/Grv

(*) Standard 24V AC. For other voltage see Ordering Guide
Variable End Connections (adaptors) available - see End Connection table
(**) The prices refer to valves without flow stem.
For additional Flow stem price see page 20



GreenApp Controlled Valve

With 3-way control, Application Operated

IR-110-4G-3W-X

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Plastic Flanges
	A	Threaded
		Plastic Flanges
	T	Threaded
	D	Threaded

Size	Pattern	Connection
3"L	DN80L	Y Threaded
		Plastic Flanges
4"	DN100	Y Threaded
		Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Metal Flanges
6"R	DN150R	Y Plastic Flanges
6"	DN150	Y Metal Flanges
		Y Plastic FI/Grv

Variable End Connections (adaptors) available - see End Connection table





Solenoid Controlled Valve

With 3-Way Control & Latching Solenoid

IR-110-LS-3W-X

Solenoid: S-982-3W / S-985-3W Latching, 12-50V/DC

Size	Pattern	Connection	Size	Pattern	Connection
1½"	DN40	Y Threaded	3"L	Y	Threaded
2"	DN50	Y Threaded			Plastic Flanges
		A Threaded		A	Threaded
2"L	DN50L	Y Threaded			Plastic Flanges
2½"	DN65	Y Threaded (male)	4"	Y	Plastic Flanges
3"	DN80	Y Threaded		A	Plastic Flanges
		Y Plastic Flanges	4"L	Y	Plastic Flanges
		A Threaded			Metal Flanges
		A Plastic Flanges	6"R	Y	Metal Flanges
	T	Threaded	6"	Y	Plastic Fl/Grv
	D	Threaded			



Variable End Connections (adaptors) available - see End Connection table

Top Pilot Pressure Reducing Valve

With 3-Way Control

IR-12T-3W-X

Size	Pattern	Connection	Size	Pattern	Connection
1½"	DN40	Y Threaded	3"	Y	Plastic Flanges
2"	DN50	Y Threaded		A	Threaded
		A Threaded			Plastic Flanges
2"L	DN50L	Y Threaded		T	Threaded
2½"	DN65	Y Threaded (male)		D	Threaded
3"	DN80	Y Threaded			



Variable End Connections (adaptors) available - see End Connection table

Pressure Reducing Valve

With 3-Way Control & Manual Selector

IR-120-3W-XZ

Size	Pattern	Connection	Size	Pattern	Connection
1½"	DN40	Y Threaded	3"L	Y	Threaded
2"	DN50	Y Threaded			Plastic Flanges
		A Threaded		A	Threaded
2"L	DN50L	Y Threaded			Plastic Flanges
2½"	DN65	Y Threaded (male)	4"	Y	Plastic Flanges
3"	DN80	Y Threaded		A	Plastic Flanges
		Y Plastic Flanges	4"L	Y	Plastic Flanges
		A Threaded			Metal Flanges
		A Plastic Flanges	6"R	Y	Metal Flanges
	T	Threaded	6"	Y	Plastic Fl/Grv
	D	Threaded			



(*) Variable End Connections (adaptors) available - see End Connection table

(**) The prices refer to valves without flow stem.

For additional Flow stem price see page 20



Pressure Reducing Valve

With 3-Way Control, Hydraulic Remote Control & Manual Selector

IR-120-50-3W-XZ

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Y Plastic Flanges
	A	Y Threaded
		Y Plastic Flanges
	T	Y Threaded
	D	Y Threaded

Size	Pattern	Connection
3"L	DN80L	Y Threaded
		Y Plastic Flanges
4"	DN100	Y Threaded
		Y Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Y Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic FI/Grv



Variable End Connections (adaptors) available - see End Connection table

Pressure Reducing Valve

With 2/3-Way (Servo) Control, Hydraulic Remote Control & Manual Selector

IR-120-50-Zb

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Y Plastic Flanges
	A	Y Threaded
		Y Plastic Flanges
	T	Y Threaded
	D	Y Threaded

Size	Pattern	Connection
3"L	DN80L	Y Threaded
		Y Plastic Flanges
4"	DN100	Y Threaded
		Y Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Y Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic FI/Grv



Variable End Connections (adaptors) available - see End Connection table

Pressure Reducing Valve

Normally Closed With Hydraulic Relay

IR-120-54-3W-X

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Y Plastic Flanges
	A	Y Threaded
		Y Plastic Flanges
	T	Y Threaded
	D	Y Threaded

Size	Pattern	Connection
3"L	DN80L	Y Threaded
		Y Plastic Flanges
4"	DN100	Y Threaded
		Y Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Y Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic FI/Grv



Variable End Connections (adaptors) available - see End Connection table



Pressure Reducing Valve

With 2/3-Way (Servo) Control & Hydraulic Relay, Normally Closed

IR-120-54-b

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Y Plastic Flanges
		A Threaded
	A	A Plastic Flanges
		T Threaded
		D Threaded

Size	Pattern	Connection
3"L	DN80L	Y Threaded
		Y Plastic Flanges
	A	A Threaded
		A Plastic Flanges
4"	DN100	Y Plastic Flanges
		A Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Y Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic Fl/Grv



Variable End Connections (adaptors) available - see End Connection table

Top Pilot Pressure Reducing Valve

With 3-Way Solenoid Control

IR-12T-55-3W-X

Solenoid S-390T-3W

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded

Size	Pattern	Connection
3"	DN80	Y Plastic Flanges
		A Threaded
		A Plastic Flanges
		T Threaded
		D Threaded



(*) Standard 24V AC. For other voltage see Ordering Guide

Variable End Connections (adaptors) available - see End Connection table

Pressure Reducing Valve

With 3-Way Solenoid Control

IR-120-55-3W-X

Solenoid S-390T-3W

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Y Plastic Flanges
		A Threaded
	A	A Plastic Flanges
		T Threaded
		D Threaded

Size	Pattern	Connection
3"L	DN80L	Y Threaded
		Y Plastic Flanges
	A	A Threaded
		A Plastic Flanges
4"	DN100	Y Plastic Flanges
		A Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Y Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic Fl/Grv



(*) Standard 24V AC. For other voltage see Ordering Guide

Variable End Connections (adaptors) available - see End Connection table



Pressure Reducing Valve

With 2/3-Way (Servo) Control & 3-Way Trio Solenoid Control

IR-120-55-b

Solenoid S-390T-3W

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
	A	Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Plastic Flanges
	A	Threaded
		Plastic Flanges
	T	Threaded
	D	Threaded

Size	Pattern	Connection
3"L	DN80L	Y Threaded
	A	Plastic Flanges
4"	DN100	Y Threaded
	A	Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic FI/Grv



Variable End Connections (adaptors) available - see End Connection table

Pressure Reducing & Sustaining Valve

With 3-Way Control & Manual Selector

IR-123-3W-XZ

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
	A	Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Plastic Flanges
	A	Threaded
		Plastic Flanges
	T	Threaded
	D	Threaded

Size	Pattern	Connection
3"L	DN80L	Y Threaded
	A	Plastic Flanges
4"	DN100	Y Threaded
	A	Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic FI/Grv



(*) Variable End Connections (adaptors) available - see End Connection table

(**) The prices refer to valves without flow stem.

For additional Flow stem price, see page 20

Pressure Reducing & Sustaining Valve

With 3-Way Control, Hydraulic Remote Control & Manual Selector

IR-123-50-3W-XZ

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
	A	Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Plastic Flanges
	A	Threaded
		Plastic Flanges
	T	Threaded
	D	Threaded

Size	Pattern	Connection
3"L	DN80L	Y Threaded
	A	Plastic Flanges
4"	DN100	Y Threaded
	A	Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic FI/Grv



Variable End Connections (adaptors) available - see End Connection table



Pressure Sustaining Valve

With 3-Way Control & Manual Selector

IR-130-3W-XZ

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Y Plastic Flanges
		A Threaded
	A	A Plastic Flanges
		T Threaded
		D Threaded

Size	Pattern	Connection
3"L	DN80L	Y Threaded
		Y Plastic Flanges
	A	A Threaded
4"	DN100	Y Plastic Flanges
		A Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Y Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic Fl/Grv



(*) Variable End Connections (adaptors) available - see End Connection table

(**) The prices refer to valves without flow stem.

For additional Flow stem price, see page 20

Pressure Sustaining Valve

With 3-Way Solenoid Control

IR-130-55-3W-X

Solenoid S-390-T-3W

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Y Plastic Flanges
		A Threaded
	A	A Plastic Flanges
		T Threaded
		D Threaded

Size	Pattern	Connection
3"L	DN80L	Y Threaded
		Y Plastic Flanges
	A	A Threaded
4"	DN100	Y Plastic Flanges
		A Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Y Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic Fl/Grv



(*) Standard 24V AC. For other voltage see Ordering Guide

Variable End Connections (adaptors) available - see End Connection table

Quick Pressure Relief Valve

IR-13Q-2W

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Y Plastic Flanges
	A	A Threaded
		A Plastic Flanges
3"L	DN80L	Y Threaded

Size	Pattern	Connection
3"L	DN80L	Y Plastic Flanges
		A Threaded
4"	DN100	Y Plastic Flanges
		A Plastic Flanges
4"L	DN100L	Y Plastic Flanges
		Y Metal Flanges
6"R	DN150R	Y Metal Flanges
6"	DN150	Y Plastic Fl/Grv



Variable End Connections (adaptors) available - see End Connection table



Level Control Valve

With Modulating Horizontal Float

IR-150-N3-60-2W

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Y Plastic Flanges
		A Threaded

Size	Pattern	Connection
3"	DN80	A Plastic Flanges
3"L	DN80L	Y Threaded
		Y Plastic Flanges
		A Threaded
		A Plastic Flanges
4"	DN100	Y Plastic Flanges
		A Plastic Flanges



Variable End Connections (adaptors) available - see End Connection table

Flow Control Valve

With Differential Pressure Duct & Manual Selector

IR-170-DZb

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Y Plastic Flanges
		A Threaded
		A Plastic Flanges

Size	Pattern	Connection
3"	DN80	T Threaded
		D Threaded
3"L	DN80L	Y Threaded
		Y Plastic Flanges
		A Threaded
		A Plastic Flanges
4"	DN100	Y Plastic Flanges
		A Plastic Flanges



Variable End Connections (adaptors) available - see End Connection table

Flow Control Valve & Pressure Reducing Valve

With Differential Pressure Duct & Manual Selector

IR-172-DZb

Size	Pattern	Connection
1½"	DN40	Y Threaded
2"	DN50	Y Threaded
		A Threaded
2"L	DN50L	Y Threaded
2½"	DN65	Y Threaded (male)
3"	DN80	Y Threaded
		Y Plastic Flanges
		A Threaded
		A Plastic Flanges

Size	Pattern	Connection
3"	DN80	T Threaded
		D Threaded
3"L	DN80L	Y Threaded
		Y Plastic Flanges
		A Threaded
		A Plastic Flanges
4"	DN100	Y Plastic Flanges
		A Plastic Flanges



Variable End Connections (adaptors) available - see End Connection table



Composite Control Valves for High Pressure (PN16)

Hydraulic Control Basic Valve

IR-105-HP

The IR-100-HP is a full polymeric valves rated for 16 bar; 250 psi

Size	Pattern	Connection	Size	Pattern	Connection
2"	DN50	Y Threaded	3"L	DN80L	Y Metal Flanges
2"L	DN50L	Y Threaded	4"	DN100	Y Metal Flanges
3"	DN80	Y Threaded	4"L	DN100L	Y Metal Flanges
		Y Metal Flanges	6"R	DN150R	Y Metal Flanges
3"L	DN80L	Y Threaded			

New



Pressure Reducing Valve

For High Pressure, With Hydraulic Remote Control

IR-120-50-HP-3W-XZ

The IR-100-HP is a full polymeric valves rated for 16 bar; 250 psi

Size	Pattern	Connection	Size	Pattern	Connection
2"L	DN50L	Y Threaded	3"L	DN80L	Y Metal Flanges
3"	DN80	Y Threaded	4"	DN100	Y Metal Flanges
		Y Metal Flanges	4"L	DN100L	Y Metal Flanges
3"L	DN80L	Y Threaded	6"R	DN150R	Y Metal Flanges

New



Quick Pressure Relief Valve

For High Pressure

IR-13Q-HP-2W

The IR-100-HP is a full polymeric valves rated for 16 bar; 250 psi

Size	Pattern	Connection	Size	Pattern	Connection
2"L	DN50L	Y Threaded	3"L	DN80L	Y Metal Flanges
3"	DN80	Y Threaded	4"	DN100	Y Metal Flanges
		Y Metal Flanges	4"L	DN100L	Y Metal Flanges
3"L	DN80L	Y Threaded	6"R	DN150R	Y Metal Flanges

New



Variable End Connections (adaptors) available - see End Connection table

Additional Features & Options - Suffix Code

Code	Description	Size Range
50-2W-P	Hydraulic Control (2-Way Hydraulic Relay) - Plastic	1½"-6" \ DN40-150
50-3W-P	Hydraulic Control (T Selector Shuttle Valve) - Plastic	1½"-6" \ DN40-150
54-3W-P	3-Way Hydraulic Relay (3W-HRV) ½" - Plastic	1½"-6" \ DN40-150
55	Solenoid Controlled	1½"-8" \ DN40-200
M	Flow Stem	1½"-3" \ DN40-80 3"L-4" \ DN80L-100 6" \ DN150
5*	Plastic Test Point	1½"-6"R \ DN40-150R
Z	Manual Selector	1½"-4"L \ DN40-100L

(*) Plastic Test Point is Standard for all valves.



Add on Price for End Connections Adaptors - Kits / Packs

	Code	Description
	3"-FF	3"-3"L Plastic Flange Assy
	4"L-FF	4"L Plastic Flange Assy
	4"-CC	4"- Ductile Iron, "Corona" Flange Assy. 4"
	6"R-CC	6"R- Ductile Iron, "Corona" Flange Assy. 6"
	T2	3"-3"L, PVC Glue-in Adaptors 110mm ID / 125mm OD
	V3	3"-3"L Grooved Plastic Adaptors 3"
	VN	2" Grooved x NPT Male Adaptor

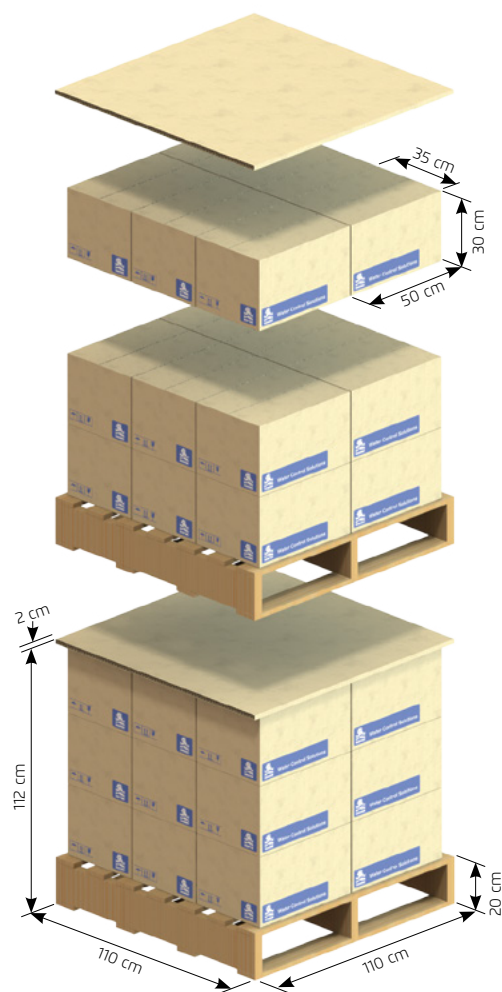
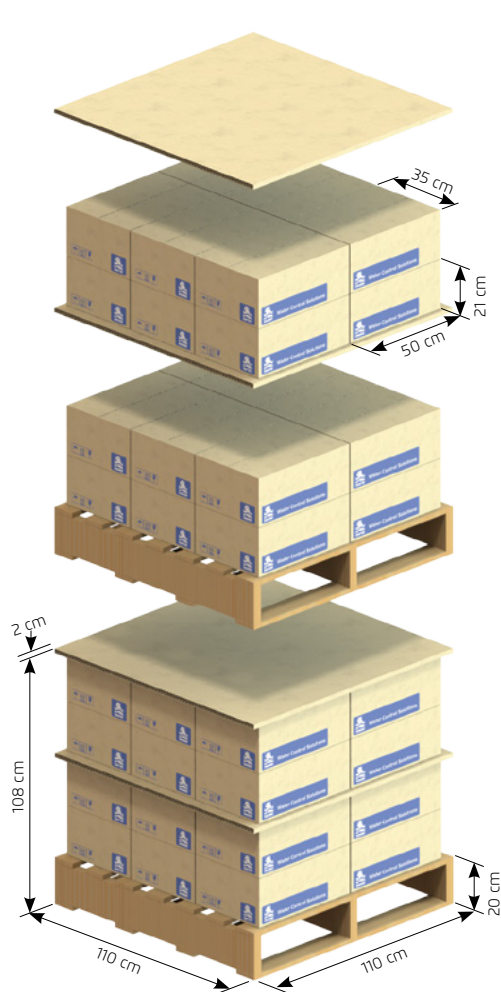
	4"-FF	4" Plastic Flange Assy
	3"-CC	3"-3"L Ductile Iron, "Corona" Flange Assy. 3"
	4"L-CC	4"L- Ductile Iron, "Corona" Flange Assy. 4"
	T1	3"-3"L, PVC Glue-in Adaptors 90mm ID / 110mm OD
	VB	2" Grooved x BSPT Male Adaptor
	V4	Grooved Plastic Adaptors, 4"



Packing Specifications

1½", 2", 2½", 2"L

3", 3"L



Per Box

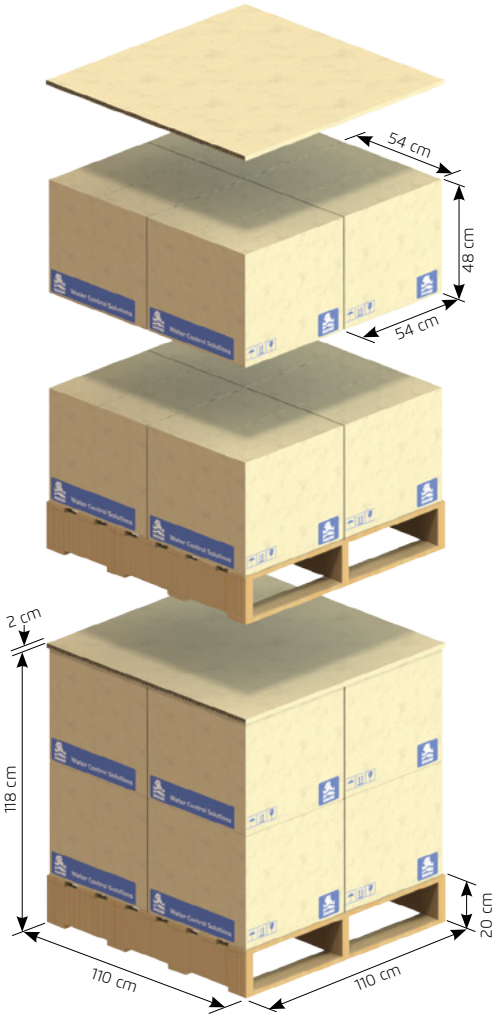
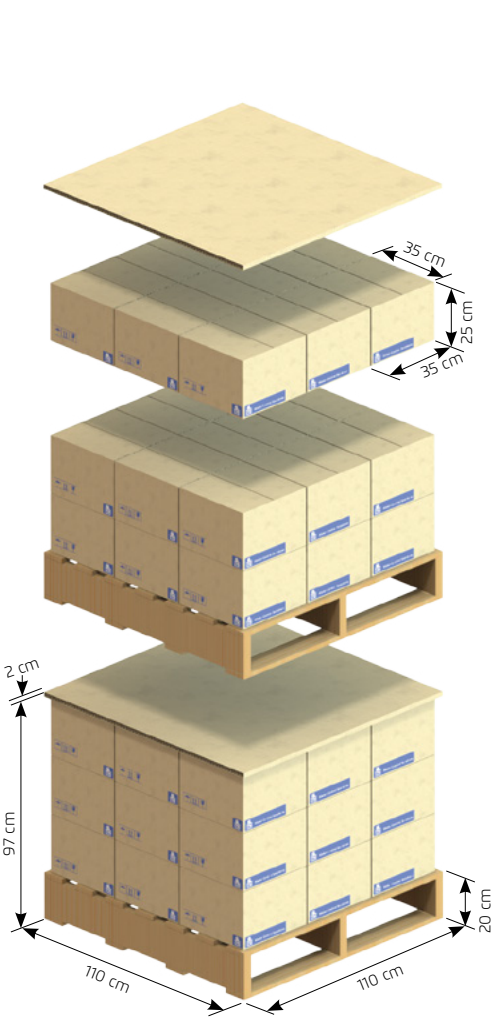
Valve Size Single Chamber	Box					
	Units	Length [cm]	Width [cm]	Height [cm]	Weight [kg]	Volume [m³]
1½", 2", 2½"	10	50	35	21	13	0.04
2"L	6	50	35	21	10	0.04
3"	6	50	35	30	10	0.06
3"L	4	50	35	30	13	0.06
4"	1	35	35	25	6	0.04
4"L	4	50	35	30	41	0.06
6"R	2	54	54	48	35	0.14
6"	2	54	54	48	27	0.14

Valve Size Double Chamber	Box					
	Units	Length [cm]	Width [cm]	Height [cm]	Weight [kg]	Volume [m³]
1½"-DC, 2"-DC	10	50	35	21	24	0.04
2"L-DC	6	50	35	21	14	0.04
3"-DC	4	50	35	30	21	0.06



Packing Specifications

4"	6"
----	----



Per Pallet

Valve Size Single Chamber	Pallet						Gross Weight [kg]	Volume [m³]
	Number of Boxes	Number of Levels	Number of Units	Length [cm]	Width [cm]	Height [cm]		
1½", 2"	24	4	240	110	110	110	335	1.3
2"L	24	4	144	110	110	110	263	1.3
3"	18	3	108	110	110	113	202	1.4
3"L	18	3	72	110	110	113	256	1.4
4"	27	3	27	110	110	98	184	1.2
4"L	18	3	72	110	110	113	760	1.4
6"R	8	2	16	110	110	119	302	1.4
6"	8	2	16	110	110	119	238	1.4

Valve Size Double Chamber	Pallet						Gross Weight [kg]	Volume [m³]
	Number of Boxes	Number of Levels	Number of Units	Length [cm]	Width [cm]	Height [cm]		
1½"-DC, 2"-DC	24	4	240	110	110	108	598	1.3
2"-DC	18	3	108	110	110	112	277	1.4
3"-DC	18	3	72	110	110	112	397	1.4





End Connections

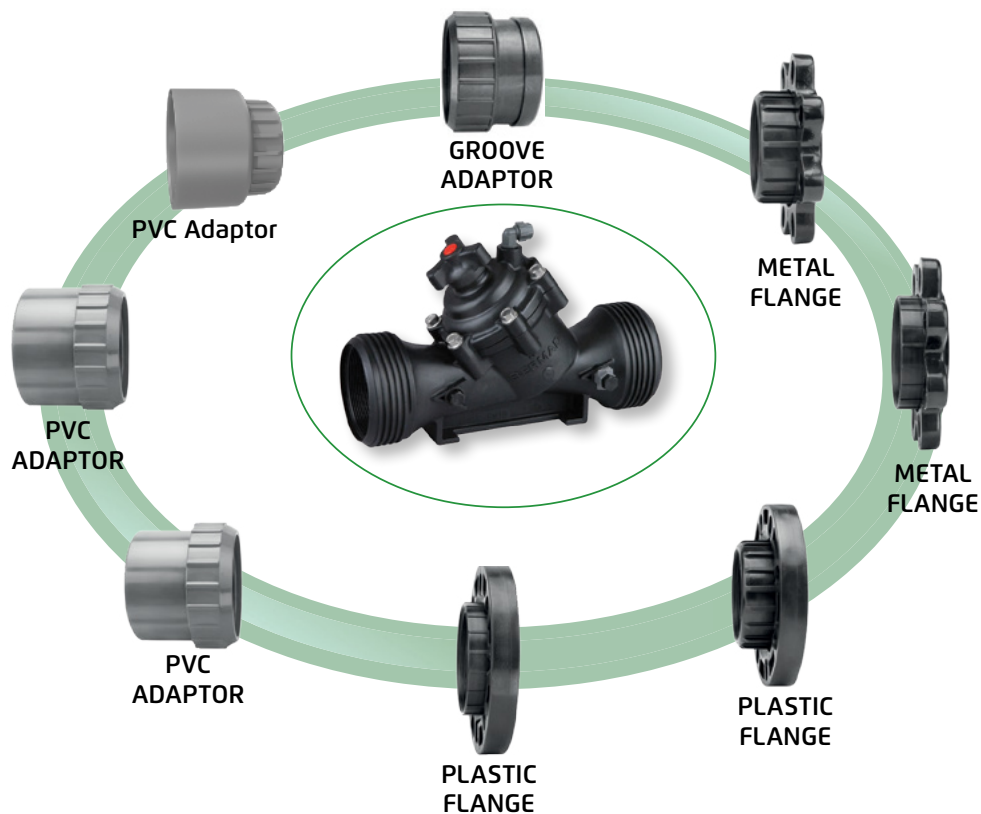
BERMAD develops and supplies a wide range of end connections for the 100 hYflow Series Valves.

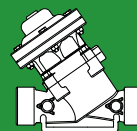
These end connections provide full flexibility when designing and installing the valves.

Select your desired end connection option from the table on page 23:

- Plastic Flanges
- Metal Flanges
- Glue-In PVC Adaptors
- Grooved Adaptors

Adaptors can be ordered per valve (2 Kits) or in Packs of 6 - 12 kits.





IR-100-DC Series

The BERMAD IR-100-DC Series Valves are state of the art composite double chamber hydraulic control valves.

The unique design provides: Isolated and protected diaphragm, Stable and accurate regulation performances, powerful opening & closing, non-slam closing characteristic & decreased pressure loss (no spring).

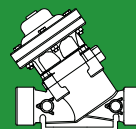
Double Chamber actuator assembly design consists of both upper and lower control chambers. Irrigation Valves worldwide can easily be configured, on-site from single to double chamber control valves. The shaft sub assembly is center guided, providing an unobstructed seat area.

Features and Benefits

- Line Pressure Driven
- Double Chambered Design
 - Requires low actuation pressure
 - Quick and powerful closure with non slam seal
 - Immediate response
 - Protected diaphragm
 - Near Zero Headloss
- User-Friendly Design
 - Simple structure and maintenance
- Pilotless proportional pressure reducing
- Accurate, stable and immediate modulation

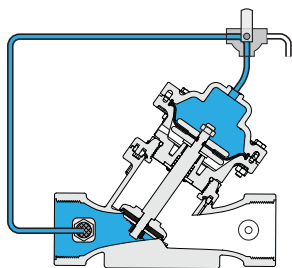
Typical Applications

- Drip Systems
- Sprinklers & Micro-Sprinklers
- Greenhouses
- Flooding Tables Drainage (with External Pressure)
- Irrigation machine and distribution line Flush-'N-Stop
- Downhill irrigation and Distribution lines
- Low flow and low pressure operations
- Serial pressure reducing



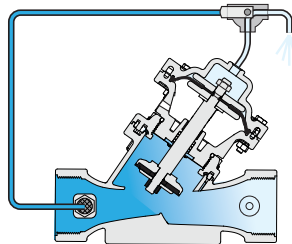
Principle of Operation

3-Way Control, on/off



Closed Position

Line pressure applied to the control chamber of the valve creates a hydraulic force that moves the valve to the closed position and provides drip tight sealing.

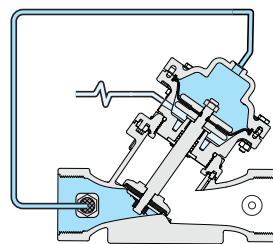


Open Position

Discharging the pressure from the control chamber to atmosphere or some other lower pressure zone, causes the line pressure acting on the seal disc to move the valve to the open position.

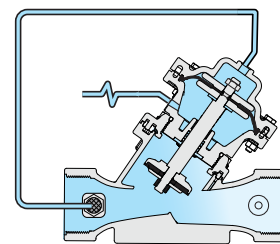
3-Way Control

Normally Closed Valve with Hydraulic Power Opening



Closed Position

Line pressure is applied constantly to the Upper Control Chamber (UCC). When the Lower Control Chamber (LCC) is vented, it allows the line pressure in the UCC to push the diaphragm assembly, thereby discharging the water from the LCC, closing the valve.



Open Position

Pressurizing the LCC creates, together with the hydraulic force that acts on the plug, a superior force that overcomes the force in the UCC and opens the valve.

Technical Specifications

Available Patterns & Sizes:

Oblique (Y) - 1½"-4"; DN40-DN100
Angle (A) - 2", 3", 3"L, 4"; DN50, DN80, DN100
"T" (T) & Dual (D) patterns - 3"; DN80

Available End Connections:

Threaded:

Female BSP-T/NPT (1½"-3"; DN40-DN80)
Male BSP-F (2" & 2½"; DN50 & DN65)

Flanged (FF):

3", 3"L, 4"; DN80, DN100

Universal Plastic or metal "Corona" ISO, ANSI, AS, JIS

PVC: 75mm, 90mm, 2.5", 3",

PVC "glue-in" adapters for cement welding

Grooved (Grv):

2", 2"L, 3", 3"L, 4"
Plastic grooved adapters

Pressure Rating:

10bar; 150psi
Operating Pressure Range: 0.5-10bar; 7-150psi
Temperature Range: Water up to 60°C; 140°F

Standard Materials:

- **Body, Cover and Plug:** Polyamide 6 & 30% GF
- **Diaphragm:** NR
- **Seals:** NR
- **Spring:** Stainless Steel
- **Cover bolts:** Stainless Steel

Flow Properties

Size	mm Inch	40 1½"	50 2"	50 2"	50L 2"L	65 2½"	80 3"	80 3"	80 3"	80 3"	80 3"	80 3"	80 3"	80 3"	80 3"	80 3"
Pattern		Y	Y	A	Y	Y	Y	A	T	TT	D	DD	Y	A	Y	A
KV		50	50	52	100	100	100	85	One side	Two sides	One side	Two sides				
									95	130	90	200	200	190	200	190

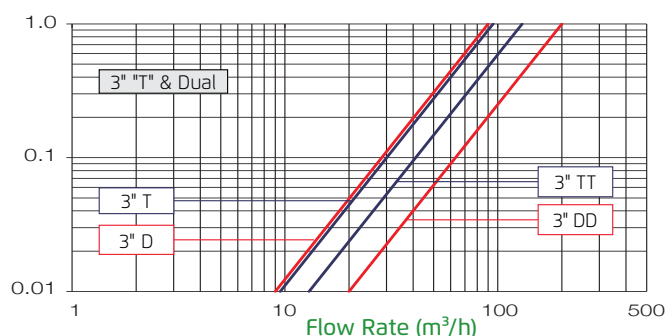
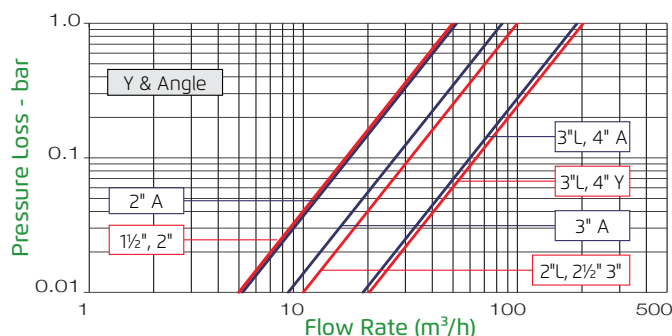
$$\Delta P = \left(\frac{Q}{K_v} \right)^2$$

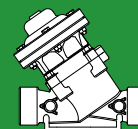
Kv = m³/h @ ΔP of 1 bar
Q = m³/h
ΔP = bar

$$C_v = 1.155 K_v$$

Flow Chart

2-Way circuit "Added Head Loss" (for "V" below 2 m/s): 0.3 bar





Dimensions & Weights

Size Inch; DN	1½"; 40	2"; 50	2"; 50	2"L; 50L	2½"; 50L	3"; 80	3"; 80
Pattern	Y DC	Y DC	Y DC	Y DC	Y DC	Y DC	Y DC
End Connections	Rc 1½ (BSP.T)	G 2 (BSP.F)	Rc 2 (BSP.T)	Rc 2 (BSP.T)	G 2½ (BSP.F)	Rc 3 (BSP.T)	Universal Flanges
	1½" NPT	---	2" NPT	2" NPT	---	3" NPT	Metal Plastic
L (mm)	200	200	230	230	230	298	308 308
H (mm)	194	196	196	220	220	232	277 277
h (mm)	40	40	40	43	43	55	100 100
W (mm)	126	126	126	135	135	135	200 200
CCDV (lit)	0.13	0.13	0.13	0.17	0.17	0.17	0.17 0.17
Weight (Kg)	1.7	1.7	1.7	2.2	2.2	2.3	5.1 3.2

Size Inch; DN	2"; 50	3"; 80	3"; 80	3"; 80	3"; 80
Pattern	A DC	A DC	A DC	Dual DC	T DC
End Connections	Rc 2 (BSP.T)	Rc 3 (BSP.T)	Universal Flanges		Rc 3 (BSP.T)
	2" NPT	3" NPT	Metal	Plastic	3" NPT
L (mm)	115	133	138	138	200
H (mm)	266	286	291	291	302
h (mm)	126	118	123	123	116
W (mm)	115	135	200	200	135
CCDV (lit)	0.13	0.17	0.17	0.17	2x0.17
Weight (Kg)	1.7	2.3	5.1	3.2	4.6

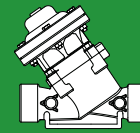
Size Inch; DN	3"L; 80L	3"L, 80L	4"; 100	3"L; 80L	3"L; 80L	4"; 100
Pattern	Y DC	Y DC	Y	Y DC	A	A
End Connections	Rc 3 (BSP.T)	Universal Flanges		Rc 3 (BSP.T)	Universal Flanges	
	3" NPT	Metal	Plastic	3" NPT	Metal	Plastic
L (mm)	338	343	343	150	155	204
H (mm)	356	395	395	434.5	440	460.5
h (mm)	60	100	100	139	145	164
W (mm)	210	210	224	210	210	224
CCDV (lit)	0.55	0.55	0.55	0.55	0.55	0.55
Weight (Kg)	5.95	7.35	6.45	5.85	6.35	7.45

CCDV = Control Chamber Displacement Volume

DC = Double Chamber

Other End Connections adapters are available on request.

For dimensions and weights of adapters or valve with adapters please consult with customer service



IR

3"

120-DC

55

Y

Size

End Connection

1½"	DN40	Female Threaded
2"	DN50	Female Threaded, Male Threaded
2"L	DN50L	Female Threaded
2½"	DN65	Male Threaded
3"	DN80	Female Threaded, Flanged, Grooved, Horn
3"L	DN80L	Flanged, Grooved or glue in
4"	DN100	Flanged, Grooved or glue in

Primary Features

Code

Basic Valve	100-DC
Solenoid Controlled Valve (Only 3 Way Control)	110-DC
Pressure Reducing Valve (Only 3 Way Control)	120-DC
Pressure Reducing & Sustaining Valve (Only 3 Way Control)	123-DC
Pressure Sustaining Valve (Only 3 Way Control)	130-DC
Quick Pressure Relief Valve (Only 3 Way Control)	13Q-DC
Level Control Valve	150-DC
Level Control & Pressure Sustaining Valve (Only 3 Way Control)	153-DC

Additional Features

Code

No Additional Features	00
Check Feature	20
Solenoid Control & Check Feature	25
Hydraulic Remote Control	50
N.C With Adjustable Hydraulic Relay	54X
N.C. with Hydraulic Relay	54
Solenoid Controlled	55
Modulating Horizontal Float	60
Green-App Control	4G
Bi-Level Electric Float	65
Normally Closed (Hydraulic)	NC
Proportional Pressure Reducing	PD

Reduction Ratios

Valve Size	Reduction Ratio
1½" & 2"	3.3
2"L, 2½", 3", 3"L & 4"	2.7

Pattern

Available Sizes

Code

Oblique	All Sizes	Y
Angle	2", 3", 3"L, 4	A
Tee	3"	T
Dual Actuated Tee	3"	D

Construction Materials

Code

Polyamid 6 & 30% GF	P
--------------------------------	----------

P

BP

4AC

PP

X

End Connections - Valve Body only (w/out adaptors)

Code

Threaded	BSP Female Threaded	BP
	NPT Female Threaded	NP
	BSP-F, Male Threaded (2" & 2½" ONLY)	BS
Horn	Inlet BSP x Outlet(s) Horn (3" Angle / Tee / Dual)	KB
	Inlet NPT x Outlet(s) Horn (3" Angle / Tee / Dual)	KN

End Connections - Valve Body with Adaptors***

Code

Flanged**	Plastic Flanges (3" & 4")	FF
	Plastic Flanges - NPT Threaded Body (3" & 4")	FN
	Metal Flanges - "Corona" (3" & 4")	CC
	Metal Flanges - NPT Threaded Body (3" & 4")	CN
PVC Cemented (glue-in)	PVC Inner Adaptors 75mmx3" BSP (3")	BJ
	PVC Inner Adaptors 2.5"x3" NPT (3")	NJ
	PVC Adaptors 90-110mm, BSP Threaded Body (3")	T1
	PVC Adaptors 110-125mm, BSP Threaded Body (3")	T2
	PVC Adaptors 3"-4", NPT Threaded Body (3", 3"L)	T3
	PVC Adaptors 4", NPT Threaded Body (3", 3"L)	T4
*Grooved Adaptors	BSP Threaded Body (2", 2"L & 3")	BV
	NPT Threaded Body (2", 2"L & 3")	VN

Voltage-Main Valve Position (When Solenoid De-Energized)

Code

24VAC	-	Normally Closed	4AC
24VAC	-	Normally Open	4AO
24VDC	-	Normally Closed	4DC
24VDC	-	Normally Open	4DO
12VDC	-	Latch Solenoid S-985 (3 Leads)	1DS
12VDC	-	Latch Solenoid S-982 (2 Leads)	2DS
9VDC	-	Latch Solenoid	9DS

Tubing & Fittings

Code

Composite Tubing & Fittings	PP
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Additional Attributes Unlimited Selection

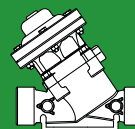
Code

3-Way Control Loop	X
Auxiliary Closing Spring	K
Differential Pressure Duct (2"L-4")	D
External Control Pressure	e
Lifting Opening Spring	L
Flow Stem (2"L, 3")	M
Flow Over-the-Seat	O
Manual Selector	Z
Low Preset Pressure (below 2 bar)	2
Plastic Pressure Test Point	5
½" Anti Vacuum at Valve Downstream	7
Closing/ Lifting Spring	K/L

Other primary features available on request.

* Complies with: ANSI C 606-81
 ** Complies with: ISO PN10, BST-D, ANSI 125/150, JIS K-10
 *** For ordering the Adaptors separately see page 23
 Inlet x Outlet end connection combinations available on request.

Other additional attributes are optional.
 Please consult Customer Service for further information.



Hydraulic Control Basic Valve - Double Chamber

IR-100-DC

Size	Pattern	Connection	Size	Pattern	Connection
1½"	DN40	Y Threaded	3"	D	Threaded
2"	DN50	A Threaded		T	Threaded
		Y Threaded		Y	Plastic Flanges Threaded
2"L	DN50L	Y Threaded	3"L	DN80L	Y Threaded
2½"	DN65	Y Threaded (male)			Y Plastic Flanges
3"	DN80	A Plastic Flanges	4"	DN100	Y Plastic Flanges
		Y Threaded			

Variable End Connections (adaptors) available - see End Connection table



Hydraulic Control Valve - Double Chamber

With Manual Selector

IR-100-DC-Z

Size	Pattern	Connection	Size	Pattern	Connection
1½"	DN40	Y Threaded	3"	A	Threaded
2"	DN50	Y Threaded		T	Threaded
		A Threaded		D	Threaded
2"L	DN50L	Y Threaded	3"L	DN80L	Y Threaded
2½"	DN65	Y Threaded (male)			Y Plastic Flanges
3"	DN80	Y Threaded	4"	DN100	Y Plastic Flanges
		Y Plastic Flanges			

Variable End Connections (adaptors) available - see End Connection table



Solenoid Controlled Valve - Double Chamber

With 3-Way Control

IR-110-DC-3W-X

Solenoid S-390T-3W

Size	Pattern	Connection	Size	Pattern	Connection
1½"	DN40	Y Threaded	3"	A	Threaded
2"	DN50	Y Threaded		T	Threaded
		A Threaded		D	Threaded
2"L	DN50L	Y Threaded	3"L	DN80L	Y Threaded
2½"	DN65	Y Threaded (male)			Y Plastic Flanges
3"	DN80	Y Threaded	4"	DN100	Y Plastic Flanges
		Y Plastic Flanges			

(*) Standard 24V AC. For other voltage see Ordering Guide

Variable End Connections (adaptors) available - see End Connection table



Proportional Pressure Reducing Valve - Double Chamber

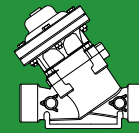
IR-120-DC-PD

Size	Pattern	Connection	Size	Pattern	Connection
1½"	DN40	Y Threaded	3"	A	Threaded
2"	DN50	Y Threaded		T	Threaded
		A Threaded		D	Threaded
2"L	DN50L	Y Threaded	3"L	DN80L	Y Threaded
2½"	DN65	Y Threaded (male)			Y Plastic Flanges
3"	DN80	Y Threaded	4"	DN100	Y Plastic Flanges
		Y Plastic Flanges			

Variable End Connections (adaptors) available - see End Connection table

For reduction ratio's table please refer to 100-DC ordering guide





Pressure Reducing Valve - Double Chamber

With 3-Way Control & Manual Selector

IR-120-DC-3W-XZ

Size	Pattern	Connection	Size	Pattern	Connection
1½"	DN40	Y Threaded	3"	DN80	A Threaded
2"	DN50	Y Threaded			T Plastic Flanges
		A Threaded			D Threaded
2"L	DN50L	Y Threaded	3"L	DN80L	Y Threaded
2½"	DN65	Y Threaded (male)			T Plastic Flanges
3"	DN80	Y Threaded			D Plastic Flanges
		Y Plastic Flanges	4"	DN100	Y Plastic Flanges

Variable End Connections (adaptors) available - see End Connection table



Pressure Reducing Valve - Double Chamber

With 3-Way Solenoid Control

IR-120-DC-55-3W-X

Solenoid S-390-T-3W

Size	Pattern	Connection	Size	Pattern	Connection
1½"	DN40	Y Threaded	3"	DN80	A Threaded
2"	DN50	Y Threaded			T Plastic Flanges
		A Threaded			D Threaded
2"L	DN50L	Y Threaded	3"L	DN80L	Y Threaded
2½"	DN65	Y Threaded (male)			T Plastic Flanges
3"	DN80	Y Threaded			D Plastic Flanges
		Y Plastic Flanges	4"	DN100	Y Plastic Flanges

(*) Standard 24V AC. For other voltage see Ordering Guide
Variable End Connections (adaptors) available - see End Connection table



Pressure Reducing & Sustaining Valve - Double Chamber

With 3-Way Control, Hydraulic Remote Control & Manual Selector

IR-123-DC-50-3W-XZ

Size	Pattern	Connection	Size	Pattern	Connection
1½"	DN40	Y Threaded	3"	DN80	A Threaded
2"	DN50	Y Threaded			T Plastic Flanges
		A Threaded			D Threaded
2"L	DN50L	Y Threaded	3"L	DN80L	Y Threaded
2½"	DN65	Y Threaded			T Plastic Flanges
3"	DN80	Y Threaded			D Plastic Flanges
		Y Plastic Flanges	4"	DN100	Y Plastic Flanges

Variable End Connections (adaptors) available - see End Connection table



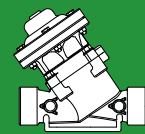
Quick Pressure Relief Valve - Double Chamber

IR-13Q-DC-2W

Size	Pattern	Connection	Size	Pattern	Connection
1½"	DN40	Y Threaded	3"	DN80	Y Plastic Flanges
2"	DN50	Y Threaded			A Threaded
		A Threaded	3"L	DN80L	Y Threaded
2"L	DN50L	Y Threaded			T Plastic Flanges
2½"	DN65	Y Threaded (male)	4"	DN100	Y Plastic Flanges
3"	DN80	Y Threaded			D Plastic Flanges

Variable End Connections (adaptors) available - see End Connection table





Pressure Sustaining Valve - Double Chamber

With 3-Way Control & Manual Selector

IR-130-DC-3W-XZ

Size		Pattern	Connection
1½"	DN40	Y	Threaded
2"	DN50	Y	Threaded
		A	Threaded
2"L	DN50L	Y	Threaded
2½"	DN65	Y	Threaded (male)
3"	DN80	Y	Threaded

Size		Pattern	Connection
3"	DN80	Y	Plastic Flanges
		A	Threaded
3"L	DN80L	Y	Threaded
			Plastic Flanges
4"	DN100	Y	Plastic Flanges



Additional Features & Options - Suffix Code

Code	Description	Size Range
50-2W-P	Hydraulic Control (2-Way Hydraulic Relay) - Plastic	1½"-6" \ DN40-150
50-3W-P	Hydraulic Control (T Selector Shuttle Valve) - Plastic	1½"-6" \ DN40-150
54-3W-P	3-Way Hydraulic Relay (3W-HRV) ½" - Plastic	1½"-6" \ DN40-150
55	Solenoid Controlled	1½"-8" \ DN40-200
K/L	Auxiliary Closing / Lifting Spring (for 100-DC models only)	1½"-4" \ DN40-100
M	Flow Stem	1½"-3" \ DN40-80
		3"L-4" \ DN80L-100
		6" \ DN150
5*	Plastic Test Point	1½"-6"R \ DN40-150R
Z	Manual Selector	1½"-4"L \ DN40-100L

(*) Plastic Test Point is Standard for all valves.







IR-200 Series

The BERMAD IR-200 Series Valves are the perfect solution for small Ag plots, Greenhouse, landscape, VRI and Corner valves in Center Pivots and wherever a quick response and regulating valve is needed. With its supreme design for pulse irrigation and low-pressure condition, the IR-200 Series position is in the top class of its segment.

The 200 Series range from ¾" to 2" in size, in either Globe or Angle pattern.

These control valves are designed of Composite Material technology, operated by Flexible, Supported and Balanced Diaphragm & Seal for high performances.

The IR-200 Control Valves are Hydraulic/Electric operated.

Features and Benefits

- Plastic Globe/Angle Hydro-Efficient Valve
 - Unobstructed flow path
 - Single moving part
 - High flow capacity
 - Highly durable, chemical and cavitation resistant
- Flexible Balanced Diaphragm and Seal
 - Fully opening
 - Secures drip-tight closing
 - Excellent low flow regulation performance
 - Prevents diaphragm erosion and distortion
- User-Friendly Design
 - Simple in-line inspection

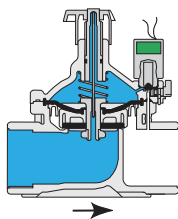
Typical Applications

- VRI & Corner valves in Center Pivot
- Greenhouses pulse irrigation & fogging valves
- Drip-Tape Systems
- LPS - Low Pressure Systems
- Remote and/or Elevated Plots
- Head Control or Main Control head
- Main & secondary Control Head
- Energy Saving Irrigation Systems
- Computerized Irrigation Systems



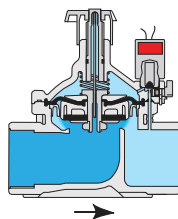
On/Off Control

2-Way Internal Electric control



Closed Position

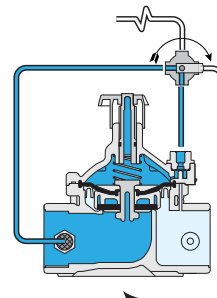
The internal restriction continuously allows line pressure into the control chamber. The solenoid controls outflow from the control chamber. When the solenoid is closed, it causes pressure to accumulate in the control chamber, therefore forcing the valve to close.



Open Position

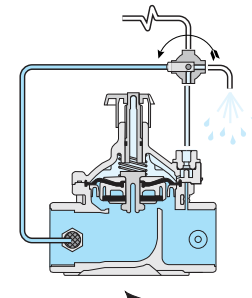
Opening the Solenoid releases more flow from the control chamber than the restriction can allow in. This causes the accumulated pressure in the control chamber to drop, enabling the line pressure acting on the plug, to open the valve.

3-Way External Control



Closed Position

Line pressure applied to the control chamber of the valve creates a superior force that changes the valve position to close, providing drip tight sealing.



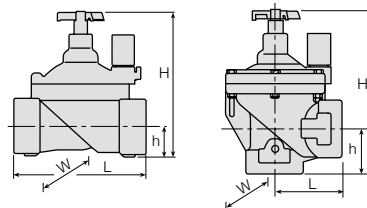
Open Position

Discharging the pressure in the control chamber to atmosphere or some other lower pressure zone causes the line pressure acting on the seal disc to change the valve position to open.

Dimensions & Weights

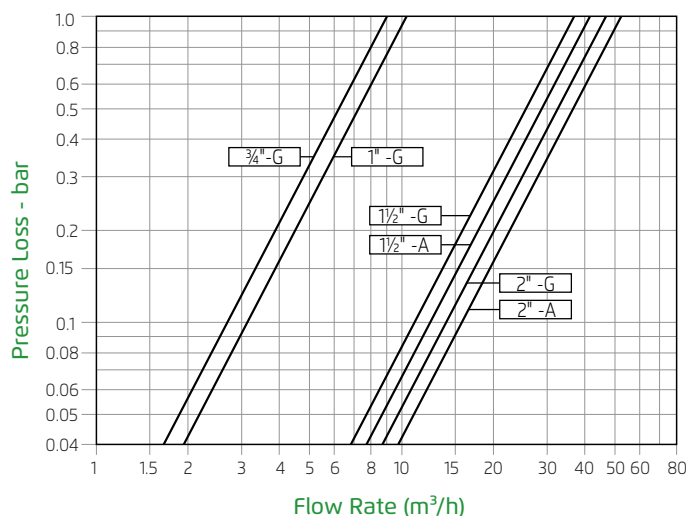
Pattern		Globe				Angle	
Size	DN inch	20 ¾	25 1	40 1½	50 2	40 1½	50 2
L (mm)		110	110	160	170	80	85
H (mm)		115	115	180	190	190	210
h (mm)		22	22	35	38	40	60
W (mm)		78	78	125	125	125	125
Weight* (Kg)		0.35	0.33	1.0	1.1	0.95	0.91
CCDV** (liter)		0.015	0.015	0.072	0.072	0.072	0.072

* Without flow stem **Control Chamber Displacement Volume (liter)



Flow Chart

2-Way circuit "Added Head Loss" (for "V" below 2 m/s): 0.3 bar



$$\Delta P = \left(\frac{Q}{K_v} \right)^2$$

$K_v = \text{m}^3/\text{h} @ \Delta P \text{ of } 1 \text{ bar}$ $C_v = 1.155 K_v$
 $Q = \text{m}^3/\text{h}$
 $\Delta P = \text{bar}$

Technical Specifications

Available Patterns and Sizes:

Globe: ¾"-2"; DN20-DN50

Angle: 1½" & 2"; DN40 & DN50

Available End Connections: BSP-T; NPT female threads

Pressure Rating: PN10; 150psi

Operating Pressure Range: 0.7-10bar; 10-150psi

Standard Materials:

- **Body and Cover:** Polyamid 6 & 30% GF
- **Diaphragm:** NBR
- **Seals:** NBR
- **Spring:** Stainless Steel
- **Cover bolts:** Stainless Steel

Size	DN Inch	20 ¾	25 1	40 1½	40 1½	50 2	50 2
Pattern		G	G	G	A	G	A
KV		9	9	37	41	47	52

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Hydraulic Control Basic Valve

With Flow Stem

IR-205-M

Size	Pattern	Connection
3/4"	DN20	G Threaded
1"	DN25	G Threaded
1 1/2"	DN40	G Threaded

Size	Pattern	Connection
1 1/2"	DN40	A Threaded
2"	DN50	G Threaded
	A	Threaded



Hydraulic Control Valve

With Flow Stem & Manual Selector

IR-205-MZ

Size	Pattern	Connection
3/4"	DN20	G Threaded
1"	DN25	G Threaded
1 1/2"	DN40	G Threaded

Size	Pattern	Connection
1 1/2"	DN40	A Threaded
2"	DN50	G Threaded
	A	Threaded



Solenoid Controlled Valve

With 2-Way Internal Control

IR-21T-2W-M

Solenoid S-390-T-2W

Size	Pattern	Connection
3/4"	DN20	G Threaded
1"	DN25	G Threaded
1 1/2"	DN40	G Threaded

Size	Pattern	Connection
1 1/2"	DN40	A Threaded
2"	DN50	G Threaded
	A	Threaded

(*) Standard 24V AC. For other voltage see Ordering Guide

(**) 3/4"&1" without flow stem - as a standard



Solenoid Controlled Valve

With 2-Way Trio Latching Solenoid Control

IR-21T-LS-2W-M

Solenoid S-392-T-2W 9-20V/DC Latch

Size	Pattern	Connection
3/4"	DN20	G Threaded
1"	DN25	G Threaded
1 1/2"	DN40	G Threaded

Size	Pattern	Connection
1 1/2"	DN40	A Threaded
2"	DN50	G Threaded
	A	Threaded

(*) 3/4"&1" without flow stem - as a standard





GreenApp Controlled Valve

Application Operated

IR-21T-GreenApp-2W

Batteries (2XAA) are not included

Size	Pattern	Connection
¾"	DN20	G Threaded
1"	DN25	G Threaded
1½"	DN40	G Threaded

Size	Pattern	Connection
1½"	DN40	A Threaded
2"	DN50	G Threaded
		A Threaded

(*) ¾" & 1" without flow stem - as a standard



Solenoid Controlled Valve

With 3-Way Trio Latching Solenoid Control & Flow Stem

IR-210-LS-3W-MX

Solenoid S-392-T-3W

Size	Pattern	Connection
1½"	DN40	G Threaded
		A Threaded

Size	Pattern	Connection
2"	DN50	G Threaded
		A Threaded



Solenoid Controlled Valve

With 3-Way Control & Flow Stem

IR-210-3W-X

Solenoid S-390T-3W

Size	Pattern	Connection
1½"	DN40	G Threaded
		A Threaded

Size	Pattern	Connection
2"	DN50	G Threaded
		A Threaded

(*) Standard 24V AC. For other voltage see Ordering Guide



Top Pilot Pressure Reducing Valve

With 2-Way Control

IR-22T-2W

Size	Pattern	Connection
1½"	DN40	G Threaded
		A Threaded

Size	Pattern	Connection
2"	DN50	G Threaded
		A Threaded





Top Pilot Pressure Reducing Valve

With 3-Way Control

IR-22T-3W-X

Size	Pattern	Connection
1½"	DN40	G
		A
		Threaded
		Threaded

Size	Pattern	Connection
2"	DN50	G
		A
		Threaded
		Threaded



Pressure Reducing Valve

With 3-Way Control, Manual Selector & Flow Stem

IR-220-3W-MXZ

Size	Pattern	Connection
1½"	DN40	G
		A
		Threaded
		Threaded

Size	Pattern	Connection
2"	DN50	G
		A
		Threaded
		Threaded



Top Pilot Pressure Reducing Valve

With 2-Way Solenoid Control

IR-22T-55-2W

Solenoid S-390-T-2W

Size	Pattern	Connection
1½"	DN40	G
		A
		Threaded
		Threaded

Size	Pattern	Connection
2"	DN50	G
		A
		Threaded
		Threaded

(*) Standard 24V AC. For other voltage see Ordering Guide



Top Pilot Pressure Reducing Valve

With Solenoid Control

IR-22T-55-3W-X

Trio Solenoid S-392-T-3W

Size	Pattern	Connection
1½"	DN40	G
		A
		Threaded
		Threaded

Size	Pattern	Connection
2"	DN50	G
		A
		Threaded
		Threaded





Pressure Reducing Valve

With 3-Way Trio Solenoid Control & Flow Stem

IR-220-55-3W-MX

Solenoid S-390-T-3W

Size	Pattern	Connection
1½"	DN40	G Threaded
	A	Threaded

Size	Pattern	Connection
2"	DN50	G Threaded
	A	Threaded



Pressure Sustaining Valve

With 2-Way Control & Flow Stem

IR-230-2W-M

Size	Pattern	Connection
1½"	DN40	G Threaded
	A	Threaded

Size	Pattern	Connection
2"	DN50	G Threaded
	A	Threaded



Pressure Sustaining Valve

With 3-Way Control, Manual Selector & Flow Stem

IR-230-3W-MXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
	A	Threaded

Size	Pattern	Connection
2"	DN50	G Threaded
	A	Threaded



Pressure Sustaining Valve

With 3-Way Solenoid Control & Flow Stem

IR-230-55-3W-MX

Solenoid S-390-T-3W

Size	Pattern	Connection
1½"	DN40	G Threaded
	A	Threaded

Size	Pattern	Connection
2"	DN50	G Threaded
	A	Threaded





Quick Pressure Relief Valve

IR-23Q-2W

Size		Pattern	Connection
1½"	DN40	G	Threaded
		A	Threaded

Size		Pattern	Connection
2"	DN50	G	Threaded
		A	Threaded



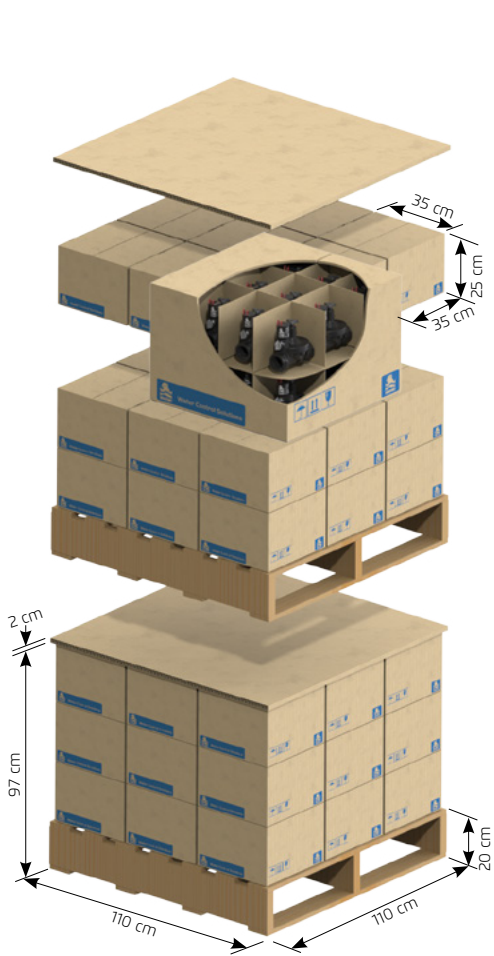
Additional Features & Options - Suffix Code

Code	Description	Size Range
50-2W-P	Hydraulic Control (2-Way Hydraulic Relay) - Plastic	1½"-2" \ DN40-50
50-3W-P	Hydraulic Control (T Selector Shuttle Valve) - Plastic	1½"-2" \ DN40-50
54-3W-P	3-Way Hydraulic Relay (3W-HRV) ½" - Plastic	1½"-2" \ DN40-50
55	Solenoid Controlled	1½"-2" \ DN40-50
Z	Manual Selector	1½"-2" \ DN40-50



Packing Specifications

3/4", 1"	1 1/2", 2"
----------	------------



Per Box

Valve Size	Box					
	Units	Length [cm]	Width [cm]	Height [cm]	Weight [kg]	Volume [m³]
3/4"	24	35	35	25	8.5	0.05
1"	24	35	35	25	8.5	0.03
1 1/2"	12	50	35	30	12.4	0.05
2"	12	50	35	30	13.8	0.05

Per Pallet

Valve Size	Pallet							
	Number of Boxes	Number of Levels	Number of Units	Length [cm]	Width [cm]	Height [cm]	Gross Weight [kg]	Volume [m³]
3/4"	27	3	648	110	110	97	251	1.2
1"	27	3	648	110	110	97	251	1.2
1 1/2"	18	3	216	110	110	112	209	1.4
2"	18	3	216	110	110	112	227	1.4







IR-350 Series

The BERMAD IR-350 is the state of the art backwash valves series. Made of composite materials with an advanced 3-Way T shape design and with BERMAD innovative double chamber technology for fast, accurate, and highly reliable operation.

Designed for automatic backwashing of filtration systems, valves are available in Angle flow (A) and Straight flow (S) configurations. The IR-350 is a double-chambered valve with long valve travel resulting in: Protected diaphragm, higher flow, quick & smooth mode change, and eliminating mixing of supply & wastewater.

Available in sizes of 2"x2", 3"x3"/2", 3"x3" 4"x4"/3", 4"x4".



Angle Flow



Straight Flow

Features and Benefits

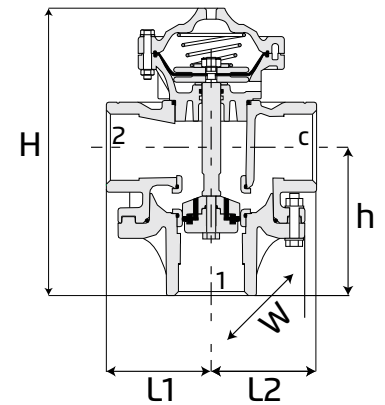
- Line Pressure Driven
- Double Chambered Design
 - Quick and smooth mode change
 - Wide application range
 - Requires low actuation pressure
 - Protected diaphragm
- Dynamic Sealing
 - Prevents seal friction and erosion
- Engineered Plastic Valve Design
 - Highly durable, chemical and cavitation resistant
- Long Valve Travel
 - Higher flow and lower head loss
 - Smooth changes of flow direction
 - Eliminates mixing of supply and wastewater
- User- Friendly
 - Can be installed in various orientations
 - Simple in-line inspection and service
- Angled or Straight Installations

Typical Applications





- Automatic Backwash of Filter Batteries
 - Media (Sand / Gravel) Filters
 - Disc Filters
- Single Filter Autonomic Backwash System

Dimensions & Weights

Dimensions	2"x2"-P	2"x2"-P grooved	3"x3"-P	4"x4"-P
H [mm]	274	274	378	464
L1 [mm]	90	116	143.5	138.5
L2 [mm]	90	116	143.5	178.5
h [mm]	127	153	189	225
W [mm]	80	80	96	130
weight [kg]	2.7	3.2	5.1	9.9



Hydraulic Data

			2"x2"-P	3"x3"-P	4"x4"-P
angle flow					
	filtration 1-C	kv	52	110	225
	backwash C-2	kv	48	100	205
straight flow					
	filtration 2-C	kv	46	93	190
	backwash C-1	kv	60	122	250

$$\Delta P = \left(\frac{Q}{K_v} \right)^2$$

$K_v = m^3/h$ @ ΔP of 1 bar

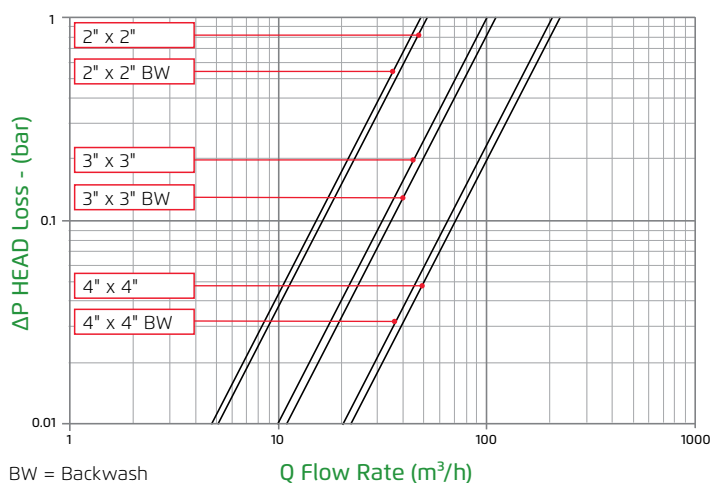
$Q = m^3/h$

$\Delta P = \text{bar}$

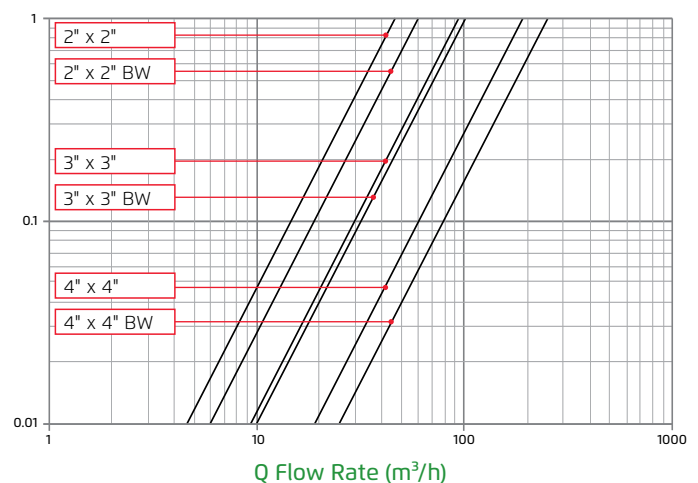
$C_v = 1.155 K_v$

Flow Chart

Angle Flow



Straight Flow





Technical Data

Control Chamber Displacement Volume:

2"x2": 0.13 liter; 0.03 gallon; **3"x3"**: 0.34 liter; 0.09 gallon; **4"x4"**: 0.55 liter; 0.15 gallon

Standard Valve : 2-10 bar ; 30-150 psi

External Operating Pressure: 85%-100% of operating pressure

Maximum Temperature: 65°C;150°F

Flow Patterns: Angled Flow, Reverse Angled Flow, Straight Flow, Reverse Straight Flow

End Connections: All threads are BSP

Size	Port C	Port 2	Port 1
2"x2"	<ul style="list-style-type: none"> • Threaded 2" • Grooved 2" (with adaptors) 	<ul style="list-style-type: none"> • Threaded 2" • Grooved 2" (with adaptors) 	<ul style="list-style-type: none"> • Threaded 2" • Grooved 2" (with adaptors)
3"x3" 3"x3"/2"	<ul style="list-style-type: none"> • Grooved 3" 	<ul style="list-style-type: none"> • Grooved 3" 	<ul style="list-style-type: none"> • Grooved 3" • Grooved 3" x Int. Thread 2"
4"x4" 4"x4"/3"	<ul style="list-style-type: none"> • Grooved 4" 	<ul style="list-style-type: none"> • Grooved 4" 	<ul style="list-style-type: none"> • Grooved 4" • Grooved 4" x Int. Thread 3"

Materials

Valve Body:

Plastic: Polyamide 6 – 30GF Black All Sizes

Separating Partition & Lower Adaptor: Polyamide 6 – 30GF Black

Cover: Polyamide 6 – 30GF (Angle Flow – Black; Straight Flow – Grey)

Diaphragm: NR-AL52 Nylon Fabric Reinforced

Seats: Stainless Steel 304

Plugs: Acetal Copolymer Black (drilled) / Grey (undrilled)

Seal, O-Rings: NBR, EPDM (potable water standard)

Spring: Stainless Steel AISI 302

Shaft: Stainless Steel AISI 303

External Bolts, Studs, Nuts & Discs: Stainless Steel

IR

3"x3"

350-55

A

P

P

VI

UC

4A0

PP

Z

Size	
2"x2"	DN50x50
3"x3"	DN80x80
3"x3/2" ⁽¹⁾	DN80x80/50 ⁽¹⁾
4"x4"	DN100x100
4"x4/3" ⁽²⁾	DN100x100/80 ⁽²⁾

(1) ■ Straight flow only
 ■ Port 1 (drain) is 3" grooved and 2" female threaded

(2) ■ Straight flow only
 ■ Port 1 (drain) is 4" grooved and 3" female threaded

Port 1 (Lower Seat) Connection		Code
BSP Threaded Female		P
Grooved		V

Port 2 / C Connections		Code
Grooved ANSI C 606-81 Steel Pipe		VI
BSP Threaded Female 2"x2" only		BP

Optional 2" Adaptors are available on request:

- BSP Male Threaded x Grooved (when Grooved is required).
- BSP Male Threaded x NPT Female Threaded (when NPT is required).

Coating	Code
Uncoated	UC

Voltage-Main Valve Position (When Solenoid De-Energized)		Code
24VAC - Normally Open		4A0
24VDC - Normally Open		4D0
12VDC - Normally Open		1D0
12VDC - Latch Solenoid S-985 (3 Leads)		1DS
12VDC - Latch Solenoid S-982 (2 Leads)		2DS
9VDC - Latch Solenoid		9DS

Other electrical ratings available on request.

Primary Features	Code
Filter Backwash Valve	350
Filter Backwash Valve with Hydraulic Accelerator	350-54
Filter Backwash Valve, Solenoid Controlled	350-55

Other primary features available on request.

Tubing & Fittings	Code
Composite Tubing & Fittings	PP

Additional Attributes Unlimited Selection	Code
EPDM Elastomers Seals & Diaphragm	E1
Viton Elastomers Seals & Diaphragm	E2
Manual Selector	Z
Plastic Gauge Test Point	5

Other additional attributes are optional.

Pattern / Flow Options	Code
Angle Flow	A
Straight Flow	S
Angle & Reverse Flow	A-0
Straight & Reverse Flow	S-0

Body Material	Code
Nylon - G.F.	P



Filter Backwash Hydraulic Valve

Double Chamber

IR-2X2-350-P

Size		Pattern	Connection
2"	DN50	A	Threaded
		S	Threaded

Size		Pattern	Connection
2"	DN50	A-O	Threaded
		S-O	Threaded

** A= Angle Flow - Black Cover



Filter Backwash Hydraulic Valve

Double Chamber

IR-3X3-350-P

Size		Pattern	Connection
3"	DN80	A	Grooved-US
		S	Grooved-US

Size		Pattern	Connection
3"	DN80	A-O	Grooved-US
		S-O	Grooved-US

** A= Angle Flow - Black Cover



Filter Backwash Hydraulic Valve

Double Chamber

IR-4X4-350-P

Size		Pattern	Connection
4"	DN100	A	Grooved-US
		S	Grooved-US

Size		Pattern	Connection
4"	DN100	A-O	Grooved-US
		S-O	Grooved-US

** A = Angle Flow - Black Cover



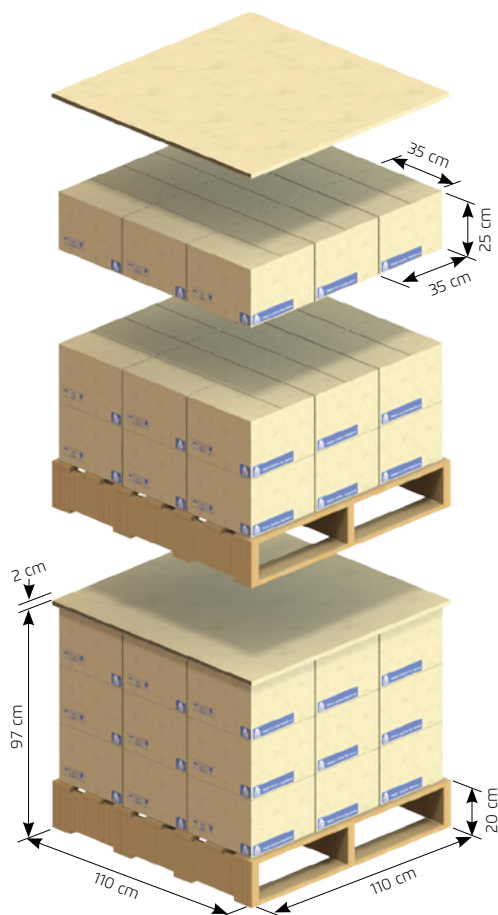
2" Groove - Thread connector

2" Connector thread to Groove

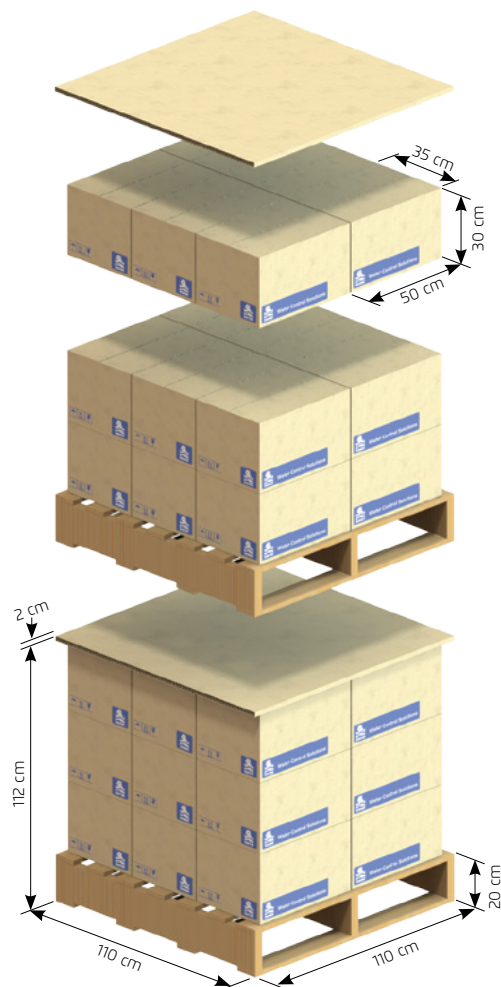
Code	Description	Size Range
VI	2" Groove - Thread connector	2" \ DN50

Packing Specifications

2"x2"x2" Plastic



3"x3"x3" Plastic
4"x4"x4" Plastic



Per Box

Valve Size	Box					
	Units	Length [cm]	Width [cm]	Height [cm]	Weight [kg]	Volume [m³]
2"x2"x2" Plastic	2	35	35	25	6.144	0.03
3"x3"x3" Plastic	2	50	35	30	11.76	0.05
4"x4"x4" Plastic	1	50	35	30	11.02	0.05

Per Pallet

Valve Size	Pallet							
	Number of Boxes	Number of Levels	Number of Units	Length [cm]	Width [cm]	Height [cm]	Gross weight [kg]	Volume [m³]
2"x2"x2" Plastic	27	3	54	110	110	97	186	1.2
3"x3"x3" Plastic	18	3	36	110	110	112	231	1.4
4"x4"x4" Plastic	18	3	18	110	110	112	218	1.4



IR-400 Series



The IR-400 is BERMAD's best cost effective metal irrigation Valves' series. with over than 30 years in the market, yet highly innovative design, IR-400 series is the best value for money you can get.

The body design includes a full bore seat with unobstructed flow path. The internal design is using advanced rubber-based materials to achieve a solid, one piece elastomeric assembly including a flexible diaphragm, vulcanized with a rugged radial seal Disc. The diaphragm is carefully balanced and peripherally supported to avoid distortion and to protect the elastomer, resulting in long-life and controlled actuation even under harsh conditions. One diaphragm and spring fully meet the valve's operating pressure range requirements.

The IR-400 Series Valves are available in diameter sizes from 1"-16"; DN25 - DN400.

Features and Benefits

- Hydraulic Control Valve
 - Line pressure driven
 - Hydraulically controlled On/Off
- Advanced Hydro-Efficient Globe Design
 - Unobstructed flow path
 - Single moving part
 - High flow capacity
- Fully Supported & Balanced Diaphragm
 - Requires low opening and actuation pressure
 - Progressively restrains valve closing
 - Prevents diaphragm distortion
- User-Friendly Design
 - Simple in-line inspection
 - Easy addition of control features

Typical Applications

- Computerized Irrigation Systems
- Distribution Centers
- LPS - Low Pressure Systems
- Level Control Valves
- Filter Stations



Technical Specifications

Connections Standard:

Flanged: ISO 7005-2 (PN10 & 16)

Threaded: BSP; NPT

Grooved: ANSI C606

Operating Pressure Ranges:

IR-400: 0.5-16 bar

For lower pressure requirements, consult BERMAD's local distributor

Temperature: Water up to 60°C

Standard Materials:

■ Castings & Forgings:

◦ Cast Iron to EN 1561

◦ Ductile Iron to EN 1563*

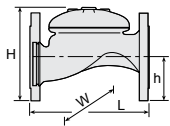
* in specific configurations as specified on the ordering guide

■ Elastomers: NR to EN 681-1

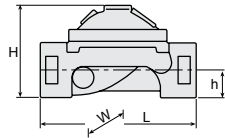
■ Coatings: Electrostatic Powder Coating Polyester

Dimensions & Weights

Globe Pattern

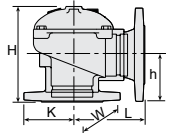


Connection Type		Flange									
Size	DN inch	50	65	80R	80	100	125	150	200	250	300
L		205	205	210	250	320	320	415	500	605	725
H		155	178	200	210	242	254	345	430	460	635
W		155	178	200	200	223	197	306	365	405	580
h		78	89	100	100	112	127	140	170	202	242
Weight (Kg)		9	10.5	12.1	19	28	33	68	125	140	290



Connection Type		Threaded						Grooved			
Size	DN inch	25	40	50	65	80R	80	50	80	100	150
L		115	153	180	210	210	255	205	250	320	415
H		68	87	114	132	140	165	108	155	191	302
W		71	98	119	129	129	170	119	170	204	306
h		34	29	39	45	53	55	31	46	61	85
Weight (Kg)		1.1	2	4	5.7	5.8	13	5	10.6	16.2	49

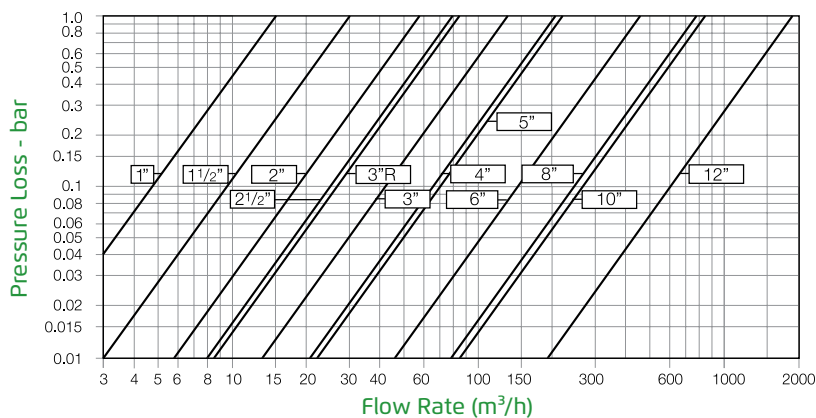
Angle Pattern



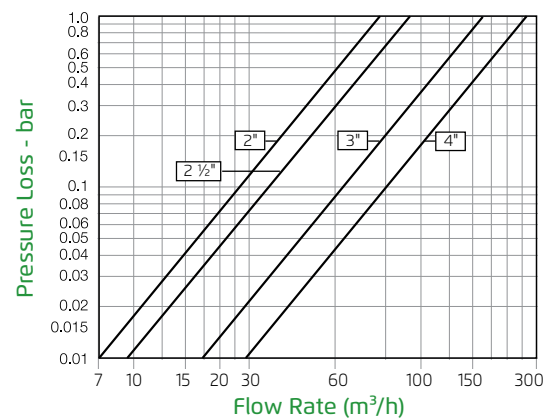
Connection Type		Threaded				Grooved		Flanged		
Size	DN inch	50	65	80R	80	80	100	50	80	100
L		86	110	110	110	120	160	121	153	160
H		136	180	178	184	194	223	160	205	223
W		119	131	131	170	170	204	155	200	223
h		61	93	91	80	90	112	83	101	112
K		56	66	66	55	45	58	78	100	112
Weight (Kg)		4.4	5.8	7	11	10	16	9	17	26

Globe Pattern

2-Way circuit "Added Head Loss" (for "V" below 2 m/s; 0.3 bar)



Angle Pattern



Size	DN Inch	25 1	40 1½	50 2	50 2	65 2½	65 2½	80 3	80 3	100 4	100 4	150 6	200 8	250 10	300 12
Pattern		G	G	G	A	G	A	G	A	G	A	G	G	G	G
KV		13	29	57	71	78	88	136	152	204	225	458	781	829	1,932



IR

3"

420

55

00

G

I

IR	Code
Irrigation	IR

Primary Features	Code
Basic Valve	405
Solenoid Controlled Valve	410
Electronic Control Valve	418
Pressure Reducing Valve	420
Pressure Reducing & Sustaining Valve	423
Pressure Sustaining Valve	430
Surge Anticipating Valve	435
Differential Pressure Sustaining Valve	436
Quick Pressure Relief Valve	43Q
Level Control Valve	450
Level Control & Pressure Sustaining Valve	453
Level & Flow Control Valve	457
Flow Control Valve	470
Flow Control & Pressure Reducing Control Valve	472
Flow Control & Pressure Sustaining Control Valve	473
Flow Control, Pressure Reducing & Sustaining Valve	475

Other primary features available on request.

Additional Features (Multiple Choices Permitted)	Code	
No Additional Feature	00	
Closing and Opening-Speed-Control	03	
Accelerated Closing	04	
Hydraulic Override	09	
Electronic Control	18	
Check Feature	20	
Solenoid Controlled & Check Feature	25	
Relief Override	3Q	
Electrically Selected Multi-Level Setting	45	
Downstream Over Pressure Guard	48	
Closing Surge Prevention	49	
Hydraulic Remote Control	50	
N.C With Adjustable Hydraulic Relay	54X	
N.C. with Hydraulic Relay	54	
Solenoid Controlled	55	
Electric Override	59	
Modulating Horizontal Float	60	
Bi-Level Electric Float	65	
Bi-Level Vertical Float	66	
Modulating Vertical Float	67	
Altitude Pilot	80*	
Setting Range	2-6 meter; 7-20 feet Setting	M1
	2-14 meter; 7-46 feet Setting	M6
	5-22 meter; 17-72 feet Setting	M5
	15-35 meter; 49-115 feet Setting	M4
	25-70 meter; 82-230 feet Setting	M8

* Select Setting Range
Other additional features available on request.

Size	
1"	DN25
1½"	DN40
2"	DN50
2½"	DN65
3"	DN80
4"	DN100
6"	DN150
8"	DN200
10"	DN250
12"	DN300

Pattern	Code
Globe	G
Angle (2"-4")	A

Construction Materials	Code
Cast Iron (up to 8")	I
Ductile Iron (10", 12" and grooved end connectors)	C

Other materials available on request.



16	PG	4AC	PP	XZ5																																																								
<table><tr><th colspan="2">End Connections</th><th>Code</th></tr><tr><td rowspan="2">Threaded</td><td>BSP Female Threaded</td><td rowspan="2">1"-3"</td><td>BP</td></tr><tr><td>NPT Female Threaded</td><td>NP</td></tr><tr><td rowspan="4">Flanged</td><td>ISO-16</td><td rowspan="4">2"-12"</td><td>16</td></tr><tr><td>ANSI-125</td><td>A1</td></tr><tr><td>ANSI-150 (for 10" & 12")</td><td>A5</td></tr><tr><td>BST-D</td><td>BD</td></tr><tr><td>Grooved</td><td colspan="2">ANSI C 606-81, Steel Pipe (Globe - 2", 3", 4", 6" & 8"; Angle - 3" & 4")</td><td>VI</td></tr></table> <p>Other end connections available on request.</p>		End Connections		Code	Threaded	BSP Female Threaded	1"-3"	BP	NPT Female Threaded	NP	Flanged	ISO-16	2"-12"	16	ANSI-125	A1	ANSI-150 (for 10" & 12")	A5	BST-D	BD	Grooved	ANSI C 606-81, Steel Pipe (Globe - 2", 3", 4", 6" & 8"; Angle - 3" & 4")		VI	<table><tr><th>Tubing & Fittings</th><th>Code</th></tr><tr><td>Composite Tubing & Fittings</td><td>PP</td></tr><tr><td>Composite Reinforced Tubing & Brass Fittings</td><td>PB</td></tr></table>	Tubing & Fittings	Code	Composite Tubing & Fittings	PP	Composite Reinforced Tubing & Brass Fittings	PB	<table><tr><th>Additional Attributes Unlimited Selection</th><th>Code</th></tr><tr><td>Servo (2/3-Way Control Loop)</td><td>b</td></tr><tr><td>3-Way Control Loop</td><td>X</td></tr><tr><td>Plastic Control Accessories</td><td>K</td></tr><tr><td>Metal Control Accessories</td><td>R</td></tr><tr><td>External Control Pressure</td><td>e</td></tr><tr><td>Large Control Filter</td><td>F</td></tr><tr><td>Orifice Assembly</td><td>U</td></tr><tr><td>Paddle Flow Control Pilot</td><td>V</td></tr><tr><td>Manual Selector</td><td>Z</td></tr><tr><td>Low Preset Pressure (below 2 bar)</td><td>2</td></tr><tr><td>Plastic Pressure Test Point</td><td>5</td></tr><tr><td>Pressure Gauge</td><td>6</td></tr><tr><td>½" Anti Vacuum at Valve Downstream</td><td>7</td></tr></table> <p>Other additional attributes are optional. Please consult Customer Service for further information.</p>	Additional Attributes Unlimited Selection	Code	Servo (2/3-Way Control Loop)	b	3-Way Control Loop	X	Plastic Control Accessories	K	Metal Control Accessories	R	External Control Pressure	e	Large Control Filter	F	Orifice Assembly	U	Paddle Flow Control Pilot	V	Manual Selector	Z	Low Preset Pressure (below 2 bar)	2	Plastic Pressure Test Point	5	Pressure Gauge	6	½" Anti Vacuum at Valve Downstream	7
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24VAC	- Normally Closed	4AC																																																										
24VAC	- Normally Open	4AO																																																										
24VDC	- Normally Closed	4DC																																																										
24VDC	- Normally Open	4DO																																																										
12VDC	- Latch Solenoid S-985 (3 Leads)	1DS																																																										
12VDC	- Latch Solenoid S-982 (2 Leads)	2DS																																																										
9VDC	- Latch Solenoid	9DS																																																										



Hydraulic Control Basic Valve

IR-405

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		G Grooved
		A Threaded
3"	DN80	A Flanged
		G Threaded
		G Flanged
		G Grooved
	A	Threaded

Size	Pattern	Connection
3"	DN80	A Flanged
4"	DN100	G Flanged
		G Grooved
	A	Flanged
		G Flanged
6"	DN150	G Flanged
		G Grooved
8"	DN200	G Flanged
		G Grooved
10"	DN250	G Flanged
12"	DN300	G Flanged



Hydraulic Control Valve

With Manual Selector & Plastic Control Accessories

IR-405-KZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		G Grooved
		A Threaded
	A	Flanged
		G Flanged
3"	DN80	G Threaded

Size	Pattern	Connection
3"	DN80	G Flanged
		G Grooved
	A	Threaded
4"	DN100	G Flanged
		G Grooved
	A	Flanged



Hydraulic Control Valve

With Manual Selector & Metal Control Accessories

IR-405-RZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Grooved
		G Flanged
		A Threaded
	A	Flanged
		G Flanged
3"	DN80	G Threaded
		G Grooved
		G Flanged
		A Threaded

Size	Pattern	Connection
3"	DN80	A Flanged
4"	DN100	G Grooved
		G Flanged
	A	Flanged
		G Flanged
6"	DN150	G Grooved
		G Flanged
8"	DN200	G Grooved
		G Flanged
10"	DN250	G Flanged
12"	DN300	G Flanged



Hydraulic Control Valve

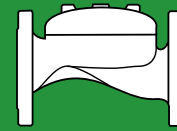
With 3-Way Hydraulic Relay & Plastic Control Accessories

IR-405-54-3W-KX

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		G Grooved
		A Threaded
	A	Flanged
		G Flanged
3"	DN80	G Threaded

Size	Pattern	Connection
3"	DN80	G Flanged
		G Grooved
	A	Threaded
4"	DN100	G Flanged
		G Grooved
	A	Flanged





Solenoid Controlled Valve

With 3-Way Control & Plastic Control Accessories

IR-410-3W-KX

Solenoid S-390T / 392T

Size		Pattern	Connection	Size		Pattern	Connection
1½"	DN40	G	Threaded	3"	DN80	G	Flanged
2"	DN50	G	Threaded				A
			Flanged			Threaded	
			Grooved			Flanged	
		A	Threaded	4"	DN100	G	Flanged
			Flanged				Grooved
3"	DN80	G	Threaded			A	Flanged



Solenoid Controlled Valve

With 3-Way Control & Metal Control Accessories

IR-410-3W-RX

Solenoid S-400-3W

Size		Pattern	Connection	Size		Pattern	Connection
1½"	DN40	G	Threaded	3"	DN80	A	Flanged
2"	DN50	G	Threaded	4"	DN100	G	Flanged
			Flanged			Grooved	
			Grooved			A	Flanged
		A	Threaded	6"	DN150	G	Flanged
			Flanged				Grooved
3"	DN80	G	Threaded	8"	DN200	G	Flanged
			Flanged				Grooved
			Grooved				10"
		A	Threaded	12"	DN300	G	Flanged



Pressure Reducing Valve

With 3-Way Control, Manual Selector & Plastic Control Accessories

IR-420-3W-KXZ

Size		Pattern	Connection
1½"	DN40	G	Threaded
2"	DN50	G	Threaded
			Flanged
			Grooved
		A	Threaded
			Flanged
3"	DN80	G	Threaded

Size		Pattern	Connection
3"	DN80	G	Flanged
			Grooved
		A	Threaded
			Flanged
4"	DN100	G	Flanged
			Grooved
		A	Flanged





Pressure Reducing Valve

With 3-Way Control, Manual Selector & Metal Control Accessories

IR-420-3W-RXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	A Flanged
		A Threaded
		G Flanged
	G	G Grooved
		G Threaded
		A Flanged
3"	DN80	A Threaded
		G Flanged
	G	G Grooved
		G Threaded

Size	Pattern	Connection
3"	DN80	G Threaded
4"	DN100	A Flanged
		G Flanged
	G	G Grooved
6"	DN150	G Flanged
8"	DN200	G Grooved
		G Flanged
10"	DN250	G Flanged
12"	DN300	G Flanged



Pressure Reducing Valve

With 2-Way Control, Hydraulic Remote Control & Metal Control Accessories

IR-420-50-2W-R

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		G Grooved
	A	A Threaded
		A Flanged
		G Threaded
3"	DN80	G Flanged
		G Grooved
		A Threaded
	A	A Threaded

Size	Pattern	Connection
3"	DN80	A Flanged
4"	DN100	G Flanged
		G Grooved
6"	DN150	A Flanged
		G Flanged
8"	DN200	G Grooved
		G Flanged
10"	DN250	G Grooved
12"	DN300	G Flanged



Pressure Reducing Valve

With 3-Way Control, Hydraulic Remote Control, Manual Selector & Plastic Control Accessories

IR-420-50-3W-KXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		G Grooved
	A	A Threaded
		A Flanged
		G Threaded
3"	DN80	G Threaded

Size	Pattern	Connection
3"	DN80	G Flanged
		G Grooved
	A	A Threaded
4"	DN100	A Flanged
		G Flanged
	A	G Grooved





Pressure Reducing Valve

With 3-Way Control, Hydraulic Remote Control, Manual Selector & Metal Control Accessories

IR-420-50-3W-RXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		G Grooved
		A Threaded
3"	DN80	A Flanged
		G Threaded
		G Flanged
		G Grooved
		A Threaded

Size	Pattern	Connection
3"	DN80	A Flanged
4"	DN100	G Flanged
		G Grooved
6"	DN150	A Flanged
		G Flanged
8"	DN200	G Grooved
		G Flanged
10"	DN250	G Grooved
12"	DN300	G Flanged



Pressure Reducing Valve

With 3-Way Control, Hydraulic Relay & Plastic Control Accessories

IR-420-54-3W-KX

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		G Grooved
		A Threaded
3"	DN80	A Flanged
		G Threaded

Size	Pattern	Connection
3"	DN80	G Flanged
		G Grooved
4"	DN100	A Threaded
		A Flanged
6"	DN150	G Flanged
		G Grooved
8"	DN200	A Flanged
		G Flanged



Pressure Reducing Valve

With 2-Way Solenoid Control & Metal Control Accessories

IR-420-55-2W-R

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		G Grooved
		A Threaded
3"	DN80	A Flanged
		G Threaded
		G Flanged
		G Grooved
		A Threaded

Size	Pattern	Connection
3"	DN80	A Flanged
4"	DN100	G Flanged
		G Grooved
6"	DN150	A Flanged
		G Flanged
8"	DN200	G Grooved
		G Flanged
10"	DN250	G Grooved
12"	DN300	G Flanged





Pressure Reducing Valve

With 3-Way Solenoid Control & Plastic Control Accessories

IR-420-55-3W-KX

Solenoid S-390-T-3W

Size	Pattern	Connection
1½"	DN40	G
2"	DN50	Threaded
		Threaded
		Flanged
		Grooved
3"	DN80	Threaded
		Flanged

Size	Pattern	Connection
3"	DN80	Flanged
		Grooved
		Threaded
		Flanged
4"	DN100	Flanged
		Grooved



Pressure Reducing Valve

With 3-Way Solenoid Control & Metal Control Accessories

IR-420-55-3W-RX

Size	Pattern	Connection
1½"	DN40	G
2"	DN50	Threaded
		Threaded
		Flanged
		Grooved
3"	DN80	Threaded
		Flanged
		Grooved
		Flanged

Size	Pattern	Connection
3"	DN80	G
4"	DN100	Flanged
		Grooved
6"	DN150	G
8"	DN200	Flanged
		Grooved
10"	DN250	G
12"	DN300	G



Pressure Reducing & Sustaining Valve

With 3-Way Control, Manual Selector & Plastic Control Accessories

IR-423-3W-KXZ

Size	Pattern	Connection
1½"	DN40	G
2"	DN50	Threaded
		Threaded
		Flanged
		Grooved
3"	DN80	Threaded
		Flanged

Size	Pattern	Connection
3"	DN80	Flanged
		Grooved
		Threaded
		Flanged
4"	DN100	Flanged
		Grooved





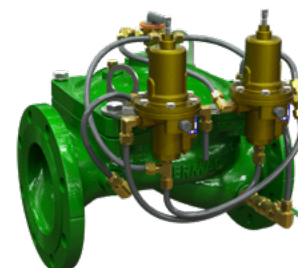
Pressure Reducing & Sustaining Valve

With 3-Way Control, Manual Selector & Metal Control Accessories

IR-423-3W-RXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		G Grooved
		A Threaded
3"	DN80	A Flanged
		G Threaded
		G Flanged
		G Grooved
		A Threaded

Size	Pattern	Connection
3"	DN80	A Flanged
4"	DN100	G Flanged
		G Grooved
6"	DN150	A Flanged
		G Flanged
8"	DN200	G Grooved
		G Flanged
10"	DN250	G Grooved
12"	DN300	G Flanged



Pressure Sustaining Valve

With 3-Way Control, Manual Selector & Plastic Control Accessories

IR-430-3W-KXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		G Grooved
		A Threaded
3"	DN80	A Flanged
		G Threaded

Size	Pattern	Connection
3"	DN80	G Flanged
		G Grooved
4"	DN100	A Threaded
		A Flanged
6"	DN150	G Flanged
		G Grooved
8"	DN200	A Flanged
		G Flanged



Pressure Sustaining Valve

With 3-Way Control, Manual Selector & Metal Control Accessories

IR-430-3W-RXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Grooved
		G Flanged
		A Threaded
3"	DN80	A Flanged
		G Threaded
		G Grooved
		G Flanged
		A Threaded

Size	Pattern	Connection
3"	DN80	A Flanged
4"	DN100	G Grooved
		G Flanged
6"	DN150	A Flanged
		G Grooved
8"	DN200	G Flanged
		G Grooved
10"	DN250	G Flanged
12"	DN300	G Flanged





Pressure Sustaining Valve

With Solenoid Override Control & Plastic Control Accessories

IR-430-59-3W-KX

Solenoid S-390-T-3W

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		G Grooved
	A	Threaded
3"	DN80	A Flanged
		A Threaded

Size	Pattern	Connection
3"	DN80	G Flanged
		G Grooved
	A	Threaded
		Flanged
4"	DN100	G Flanged
		G Grooved
	A	Flanged



Pressure Sustaining Valve

With 3-Way Solenoid Override & Metal Control Accessories

IR-430-59-3W-RX

Solenoid 3W

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Grooved
		G Flanged
	A	Threaded
		Flanged
3"	DN80	G Threaded
		G Grooved
		G Flanged
	A	Threaded
		Threaded

Size	Pattern	Connection
3"	DN80	A Flanged
4"	DN100	G Grooved
		G Flanged
6"	DN150	A Flanged
		G Grooved
8"	DN200	G Flanged
		G Grooved
10"	DN250	G Flanged
12"	DN300	G Flanged



Quick Pressure Relief Valve

With Plastic Control Accessories

IR-43Q-2W-K

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		G Grooved
	A	Threaded
		Flanged
3"	DN80	G Threaded

Size	Pattern	Connection
3"	DN80	G Flanged
		G Grooved
	A	Threaded
4"	DN100	Flanged
		G Grooved
	A	Flanged





Quick Pressure Relief Valve

With Metal Control Accessories

IR-43Q-2W-R

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Grooved
		G Flanged
		A Threaded
3"	DN80	A Flanged
		G Threaded
		G Grooved
		G Flanged
		A Threaded

Size	Pattern	Connection
3"	DN80	A Flanged
4"	DN100	G Grooved
		G Flanged
6"	DN150	A Flanged
		G Grooved
8"	DN200	G Flanged
		G Grooved
10"	DN250	G Flanged
12"	DN300	G Flanged



Level Control Valve

With 2-Way Control, Horizontal Float & Plastic Control Accessories

IR-450-60-2W-K

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Grooved
		G Flanged
		A Threaded
3"	DN80	A Flanged
		G Threaded

Size	Pattern	Connection
3"	DN80	G Flanged
		G Grooved
4"	DN100	A Threaded
		A Flanged
		G Flanged
		G Grooved
		A Flanged



Level Control Valve

With 2-Way Control, Horizontal Float & Metal Control Accessories

IR-450-60-2W-R

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
	DN50	G Grooved
	DN50	G Flanged
	DN50	A Threaded
3"	DN80	A Flanged
	DN80	G Threaded
	DN80	G Grooved
	DN80	G Flanged
		A Threaded

Size	Pattern	Connection
3"	DN80	A Flanged
4"	DN100	G Grooved
		G Flanged
6"	DN150	A Flanged
		G Grooved
8"	DN200	G Flanged
		G Grooved
10"	DN250	G Flanged
12"	DN300	G Flanged





Level Control Valve

With 3-Way Control, Bi-Level Vertical Float & Metal Control Accessories

IR-450-66-3W-RXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Grooved
		G Flanged
		A Threaded
3"	DN80	A Flanged
		G Threaded
		G Grooved
		G Flanged
	A	Threaded

Size	Pattern	Connection
3"	DN80	A Flanged
4"	DN100	G Grooved
		G Flanged
6"	DN150	A Flanged
		G Grooved
8"	DN200	G Flanged
		G Grooved
10"	DN250	G Flanged
12"	DN300	G Flanged



Filter Backwash Flow Control Valve

With 2/3-Way Control & Plastic Control Accessories

IR-470-KUbe

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		G Grooved
		A Threaded
2½"	DN65	A Flanged
		G Threaded
		G Flanged
		A Threaded
3"R	DN80R	G Threaded

Size	Pattern	Connection
3"R	DN80R	G Flanged
		A Threaded
3"	DN80	G Threaded
		G Flanged
		G Grooved
		A Threaded
4"	DN100	A Flanged
		G Flanged
		G Grooved
		A Flanged



Flow Control Valve

With 2-Way Control, Manual Selector & Metal Control Accessories

IR-470-RUZb

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Grooved
		G Flanged
		A Threaded
3"	DN80	A Flanged
		G Threaded
		G Grooved
		G Flanged
	A	Threaded

Size	Pattern	Connection
3"	DN80	A Flanged
4"	DN100	G Grooved
		G Flanged
6"	DN150	A Flanged
		G Grooved
8"	DN200	G Flanged
		G Grooved
10"	DN250	G Flanged
12"	DN300	G Flanged





Flow Control Valve

With 3-Way Control, Manual Selector & Plastic Control Accessories

IR-470-3W-KVXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		G Grooved
		A Threaded
	A	Flanged
3"	DN80	G Threaded

Size	Pattern	Connection
3"	DN80	G Flanged
		G Grooved
	A	Threaded
		Flanged
4"	DN100	G Flanged
		G Grooved
	A	Flanged



Flow Control Valve

With 3-Way Control, Manual Selector & Metal Control Accessories

IR-470-3W-RVXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Grooved
		G Flanged
		A Threaded
	A	Flanged
3"	DN80	G Threaded
		G Grooved
		G Flanged
		A Threaded
	A	Flanged

Size	Pattern	Connection
3"	DN80	A Flanged
4"	DN100	G Grooved
		G Flanged
	A	Flanged
6"	DN150	G Grooved
8"	DN200	G Grooved
		G Flanged
10"	DN250	G Flanged
12"	DN300	G Flanged



Additional Features & Options - Suffix Code-K (Plastic Accessories)

Code	Description	Size Range
20-3W-P	Check Feature (Shuttle Valve) - Plastic	1½"-4" \ DN40-100
50-3W-P	Hydraulic Control (Shuttle Valve) - Plastic	1½"-4" \ DN40-100
50-2W-P	Hydraulic Control (2-Way Hydraulic Relay) - Plastic	1½"-4" \ DN40-100
54-3W-P	½" 3-Way Hydraulic Relay (3W-HRV) - Plastic	1½"-4" \ DN40-100
55	Solenoid Controlled	1½"-4" \ DN40-100
F	Large Control Filter	1½"-16" \ DN40-400
I	Position Indicator Assembly	1½"-4" \ DN40-100
M	Flow Stem	1½"-4" \ DN40-100
U	Orifice Assembly	2" \ DN50 3" \ DN80
Z	Manual Selector SY3	1½"-4" \ DN40-100
5	Plastic Test Point	1½"-4" \ DN40-100

Additional feature prices are available.



Additional Features & Options - Suffix Code - R (Metal Accessories)

Code	Description	Size Range
20-2W-M	Check Feature	1½"-12" \ DN40-300
20-3W-M	Check Feature (Shuttle Valve)	1½"-4" \ DN40-100
		6"-12" \ DN150-300
50-2W-M	¾" 2-Way Hydraulic Relay (2W-HRV) - Brass	2"-12" \ DN50-300
50-3W-M	Hydraulic Control (Shuttle Valve)	1½"-4" \ DN40-100
		6"-12" \ DN150-300
54-3W-M	Hydraulic Accelerator Control	1½"-10" \ DN40-250
55	Solenoid Controlled	1½"-4" \ DN40-100
		6"-12" \ DN150-300
F	Large Control Filter	1½"-12" \ DN40-300
		1½"-4" \ DN40-100
I	Position Indicator Assembly	6"-8" \ DN150-200
		10"-12" \ DN250-300
M	Flow Stem	1½"-4" \ DN40-100
		6"-8" \ DN150-200
		10"-12" \ DN250-300
U	Orifice Assembly	2" \ DN50
		3" \ DN80
Z	Manual Selector - SY3	1½"-4" \ DN40-100
	Manual Selector - SY-6	6"-12" \ DN150-300
5	Plastic Test Point	

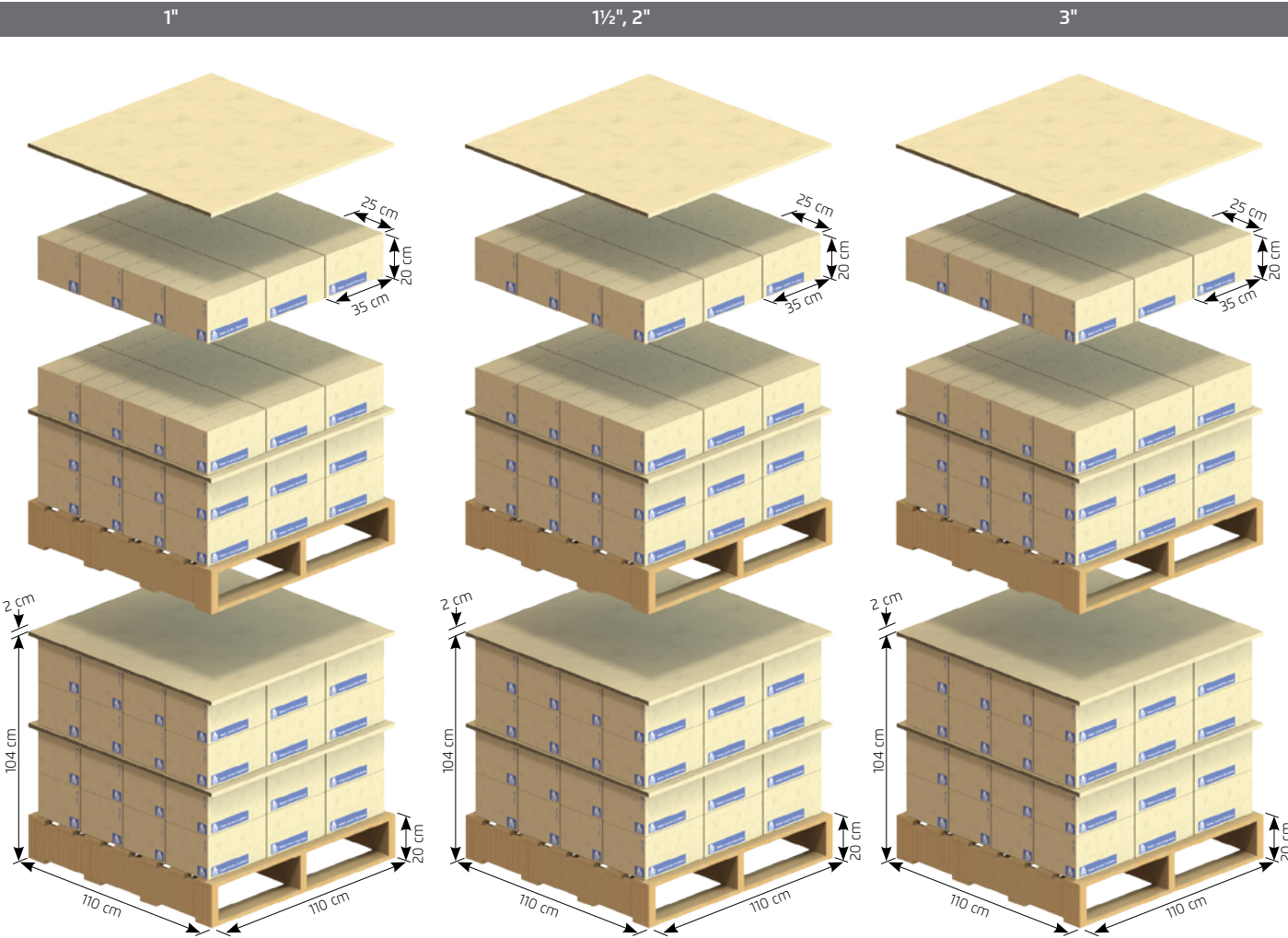
Additional feature prices are available.







Packing Specifications



Per Box

Valve Size	Box					
	Units	Length [cm]	Width [cm]	Height [cm]	Weight [kg]	Volume [m³]
1"	6	35	25	20	6.2	0.02
1 ½"	4	35	25	20	8.3	0.02
2"	4	35	25	20	16.3	0.02
3" Threaded	1	35	25	20	13.3	0.02
3" Flange	1	35	25	20	19.3	0.02

Per Pallet

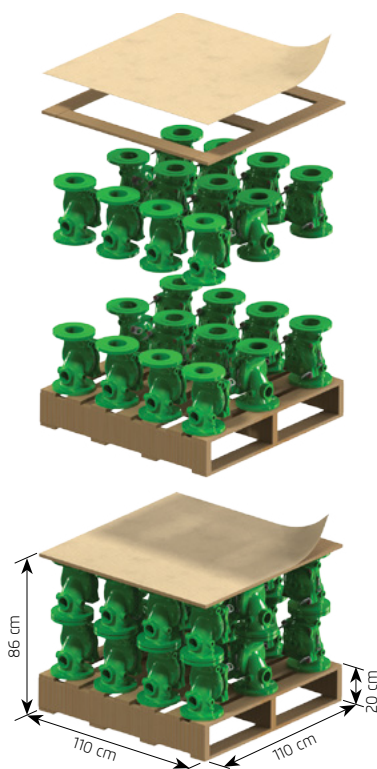
Valve Size	Pallet							
	Number of Boxes	Number of Levels	Number of Units	Length [cm]	Width [cm]	Height [cm]	Gross Weight [kg]	Volume [m³]
1"	48	4	288	110	110	104	318	1.3
1 ½"	48	4	192	110	110	104	419	1.3
2"	48	4	192	110	110	104	802	1.3
3" Threaded	48	4	48	110	110	104	658	1.3
3" Flange	48	4	48	110	110	104	946	1.3



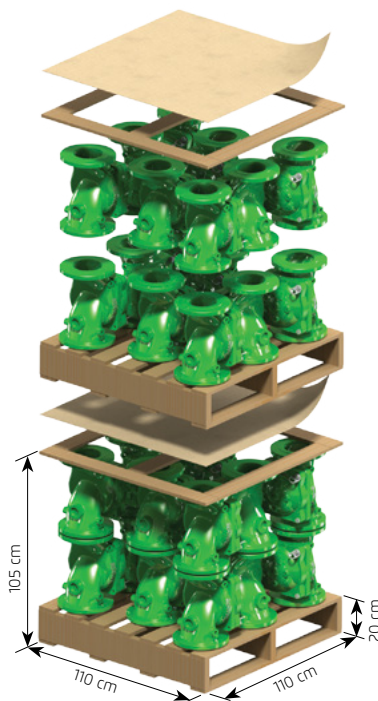


Packing Specifications

4"



6"



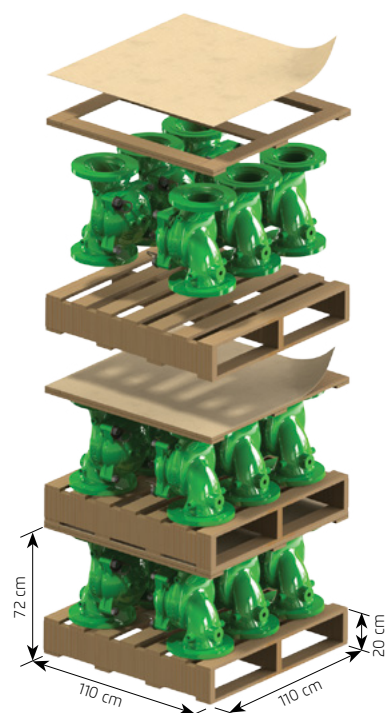
4"

No. of Layers	2
No. of Units	24
Length [cm]	110
Width [cm]	110
Height [cm]	86
Gross Weight	692
Volume [m ³]	1.04

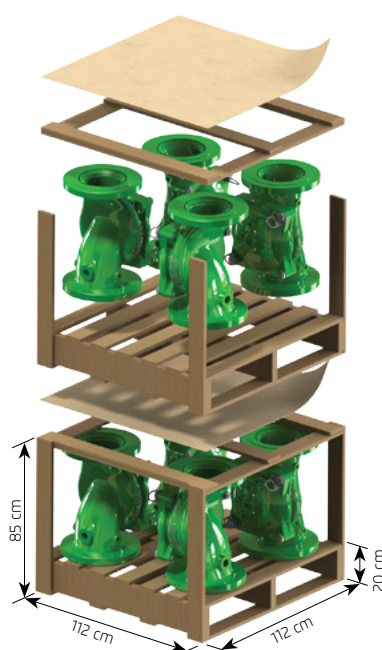
6"

No. of Layers	2
No. of Units	16
Length [cm]	110
Width [cm]	110
Height [cm]	105
Gross Weight	1108
Volume [m ³]	1.27

8"



10"

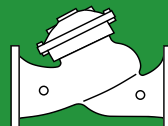


8"

No. of Layers	1
No. of Units	6
Length [cm]	110
Width [cm]	110
Height [cm]	72
Gross Weight	770
Volume [m ³]	1.31

10"

No. of Layers	1
No. of Units	4
Length [cm]	112
Width [cm]	112
Height [cm]	85
Gross Weight	580
Volume [m ³]	1.07



IR-700 Series

IR-700 Series Valves are Highly Effective Hydraulic Control Valves with excellent modulation capacities for high differential pressure applications at all flowrates.

IR-700 Series includes:

IR-700-SIGMA EN (Full Port with Super High Flow Capacity) & ES (Economic with Best Regulation Performances) Y-Pattern Double Chamber Valves, Providing:

- Quick but Surge Free Power Closing
- Immediate response to modulate close
- Stable and accurate regulation through all flow & pressure range
- Proportional Pressure Reducing Pilotless PRV

IR-700-M5 & M5L Large Size with Unique Hydro-Dynamic Globe Valve Design, Providing:

- Special open plug provides high flow capabilities = Higher flow (Kv; Cv)
- High Closing Power Ratio = Safe closing at any pressure and flow
- Super Guiding = Stable regulation and smooth closing
- Higher resistance to cavitation damage
- Available with Independent Check Feature (code "25")



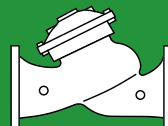
Features and Benefits

- Wide body with unique Hydro-Dynamic Design
 - Minimum pressure loss
 - Non-turbulent flow. Stable and accurate operation
 - Stainless Steel raised seat. Cavitation damage resistant
 - Obstacle free, full bore. Uncompromising reliability
- Double chamber design (700, 700-EN & 700-ES)
 - Quick but Surge Free Power Closing = Safe closing at any pressure & flow
 - Immediate response to modulate close = Eliminating high & low spikes
 - Stable and accurate regulation through all flow & pressure range
 - Unitized actuator integral unit = Minimum down time
 - Protected diaphragm
- Flexible design = Easy addition of features
- In-line serviceable = Simple & Quick maintenance

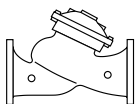
Typical Applications

- Extreme High/Low/Differential Pressure, flow, and water quality.
- Where pressure exceeds PN16
- When required diameters are above 16" and up to 42"
- When application requires Double Chamber actuator:
 - Pump control active check valve
 - Proportional "Pilotless" pressure reducing valves
 - Power opening and closing level control valves
 - Safe "close & lock" burst control valves





700-SIGMA-ES Series



Available Sizes & Patterns

- Y Pattern DN65 - DN600; 2½" - 24"

Pressure Rating

- PN 10, 16 & 25 (According to Connection Rating)

Connection Standard

■ Flanged:

ISO 7005-2 (PN 10, 16 & 25)
ASME B165 CLASS 150 & 300
JIS B2210 10K, 16K
BSTD & BSTH
AS 4087 PN16 & 35

Standard Materials

■ Main valve body & cover:

Ductile Iron to EN 1563 or ASTM A-536

■ Main valve internals:

Stainless Steel, Bronze & Epoxy coated Steel

■ Control trim: Brass, Bronze accessories

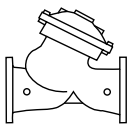
■ Fittings & Tubing:

Brass fittings & Reinforced Plastic tubing

■ Elastomers: NBR

■ Coating: Green fusion bonded Polyester

700-SIGMA-EN Series



Available Sizes & Patterns

- Y Pattern DN50 - DN300; 1½" - 16"

Pressure Rating

- PN 10, 16 & 25 (According to Connection Rating)

Connection Standard

■ Flanged:

ISO 7005-2 (PN 10, 16 & 25)
ASME B165 CLASS 150 & 300
JIS B2210 10K, 16K
BSTD & BSTH
AS 4087 PN16 & 35

Standard Materials

■ Main valve body & cover:

Ductile Iron to EN 1563 or ASTM A-536

■ Main valve internals:

Stainless Steel, Bronze & Epoxy coated Steel

■ Control trim: Brass, Bronze accessories

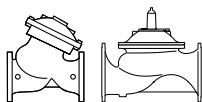
■ Fittings & Tubing:

Brass fittings & Reinforced Plastic tubing

■ Elastomers: NBR

■ Coating: Green fusion bonded Polyester

700; M5; M5M & M5L Series



Available Sizes & Patterns

- Y Pattern DN40 - DN500; 1½" - 20"
- Angle DN40 - DN450; 1½" - 18"
- Globe DN600 - DN900; 24" - 42"

Pressure Rating

- PN 10, 16 & 25 (According to Connection Rating)

Connection Standard

■ Threaded: BSP (Rp ISO 7/1)

or NPT (DN40 - DN80; 1½" - 3")

■ Flanged:

ISO 7005-2 (PN 10, 16 & 25)
ASME B165 CLASS 150 & 300
JIS B2210 10K, 16K
BSTD & BSTH
AS 4087 PN16 & 35

Standard Materials

■ Main valve body & cover:

Ductile Iron to EN 1563 or ASTM A-536

■ Main valve internals:

Stainless Steel, Bronze & Epoxy coated Steel

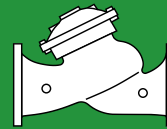
■ Control trim: Brass, Bronze accessories

■ Fittings & Tubing:

Brass fittings & Reinforced Plastic tubing

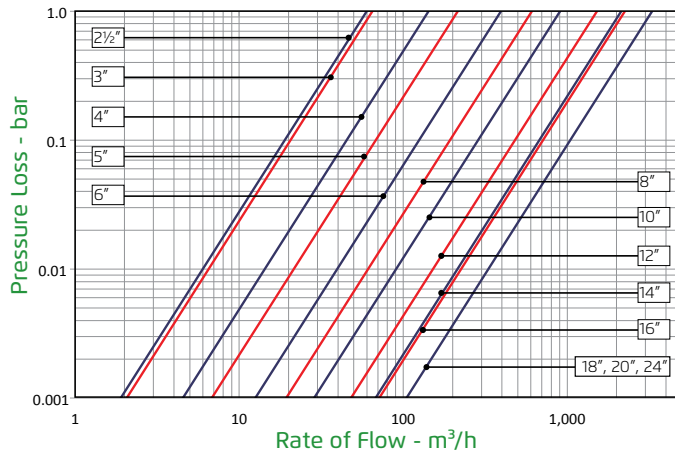
■ Elastomers: NBR

■ Coating: Green fusion bonded Polyester

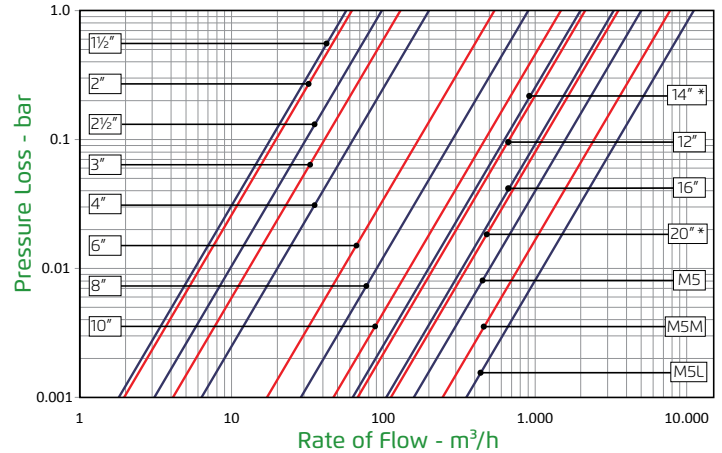


Flow Charts

700-Sigma-ES







700-Sigma-EN; 700-M5, M5M, M5L







* 700 Series


Flow Properties

700-SIGMA-ES		DN	65	80	100	125	150	200	250	300	400	500	600
		inch	2 1/2"	3"	4"	5"	6"	8"	10"	12"	16"	20"	24"
Y-Pattern Flat Disc 	Kv		60	65	143	215	395	610	905	1,520	2,250	3,300	3,300
	Cv		69	75	165	248	456	705	1,046	1,756	2,600	3,812	3,812
Y-Pattern U-Plug 	Kv		51	55	123	183	336	519	769	1,292	2,027	2,970	2,970
	Cv		59	64	142	211	388	599	888	1,492	2,341	3,430	3,430

700-SIGMA-EN		DN	40	50	65	80	100	150	200	250	300	400
		inch	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"	16"
Y-Pattern Flat Disc 	Kv		57	62	98	130	200	540	905	1,480	2,140	3,330
	Cv		66	72	113	150	231	624	1,045	1,709	2,472	3,812
Y-Pattern U-Plug 	Kv		46	48	73	102	140	453	767	1,310	1,940	2,970
	Cv		53	55	84	118	162	523	886	1,513	2,241	3,430

700		mm	40	50	65	80	100	150	200	250	300	350	400	450	500
		inch	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
Y-Pattern Flat Disc 	Kv		42	50	55	115	200	460	815	1,250	1,850	1,990	3,310	3,430	3,550
	Cv		49	58	64	133	230	530	940	1,440	2,140	2,300	3,820	3,960	4,100
Y-Pattern V-Port 	Kv		36	43	47	98	170	391	693	1,063	1,573	1,692	2,814	2,916	3,018
	Cv		41	49	54	113	200	450	800	1,230	1,820	1,950	3,250	3,370	3,490
Angle Flat Disc 	Kv		46	55	61	127	220	506	897	1,375	2,035	2,189	3,641	3,773	NA
	Cv		53	64	70	146	250	580	1,040	1,590	2,350	2,530	4,210	4,360	NA
Angle V-Port 	Kv		39	47	51	108	187	430	762	1,169	1,730	1,861	3,095	3,207	NA
	Cv		45	54	59	124	220	500	880	1,350	2,000	2,150	3,580	3,710	NA

700-M5; 700-M5L

			M5	M5M	M5L
G-Pattern Flat Disc 	Kv		5,020	6,850	11,150
	Cv		5,798	7,878	12,878

Differential Pressure & Flow Calculation

$$\Delta P = \left(\frac{Q}{K_v} \right)^2$$

$K_v = m^3/h$ @ ΔP of 1 bar

$Q = m^3/h$

$\Delta P = \text{bar}$

$C_v = 1.155 K_v$

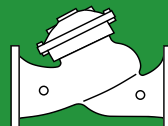
Where:

K_v = Valve flow coefficient (flow in m³/h at 1bar Diff. Press.)

C_v = Valve flow coefficient (flow in gpm at 1psi Diff. Press.)

Q = Flow rate (m³/h; gpm)

ΔP = Differential pressure (bar; psi)



Flanged

700-SIGMA-ES Series

Y Pattern		DN	65	80	100	125	150	200	250	300	400	500	600
		inch	2½"	3"	4"	5"	6"	8"	10"	12"	16"	20"	24"
	ISO PN 10; 16; 25	L* (mm)	290	310	350	400	480	600	730	850	1,100	1,250	1,450
		W (mm)	190	210	255	270	320	380	450	540	660	815	920
		h (mm)	98	108	130	140	163	193	227	265	334	398	490
		H (mm)	242	252	318	375	411	506	600	721	943	1,220	1,240
		Weight (Kg)	18	22	38	62	78	125	198	306	515	1,085	1,290

* Maximum Dimensions (Length according to EN 558-1; ISO 5752)

700-SIGMA-EN Series

Y Pattern		DN	40	50	65	80	100	150	200	250	300	400
		inch	1½"	2"	2½"	3"	4"	6"	8"	10"	12"	16"
	ISO PN 10; 16; 25	L* (mm)	230	230	290	310	350	480	600	730	850	1,100
		W (mm)	155	165	180	210	255	320	400	480	570	815
		h (mm)	81	86	92	108	130	163	193	227	272	334
		H (mm)	234	246	290	252	318	514	618	725	881	1,171
		Weight (Kg)	12	14	20	28	47	96	158	256	403	974

* Maximum Dimensions (Length according to EN 558-1; ISO 5752)

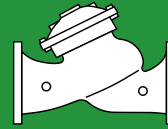
700 Series - M5, M5M & M5L

G Pattern		Type	DN	500	600	700	750	800	900	1000	1050	1200
			inch	20"	24"	28"	30"	32"	36"	40"	42"	48"
	M5	PN 16; 25	L (mm)**	1,250	1,450	1,460	1,750	1,850 1,865 ⁽¹⁾	-	-	-	-
			W (mm)	965	965	965	1,020	1,026 1,106 ⁽¹⁾	-	-	-	-
			h (mm)	385	435	493	530	530	-	-	-	-
			H (mm)	1,235	1,350	1,410	1,380	1,448	-	-	-	-
			Weight (kg)	1,318	1,590	1,745	1,711	1,920	-	-	-	-
	M5M	PN 16; 25	L (mm)**	-	1,450	1,650	1,750	1,850	-	-	-	-
			W (mm)	-	1,130	1,130	1,130	1,130	-	-	-	-
			h (mm)	-	450	500	530	560	-	-	-	-
			H (mm)	-	1,561	1,611	1,641	1,671	-	-	-	-
			Weight (kg)	-	1,791	1,916	2,086	2,216	-	-	-	-
	M5L	PN 16; 25	L (mm)**	-	-	-	1,750	1,850	2,050	2,250	2,251	2,252
			W (mm)	-	-	-	1,425	1,425	1,425	1,425	1,345	1,530
			h (mm)	-	-	-	507	545	600	660	693	785
			H (mm)	-	-	-	1,740	1,780	1,835	1,900	1,913	2,001
			Weight (kg)	-	-	-	3,300	3,200	3,350	3,710	4,216	4,062

* Maximum Dimensions (Length according to EN 558-1; ISO 5752)

** Length may vary according to flange standard.

⁽¹⁾ PN25



700 Series

Angle Pattern		DN	40	50	65	80	100	150	200	250	300	350	400	450
		inch	1 ½"	2"	2 ½"	3"	4"	6"	8"	10"	12"	14"	16"	18"
	PN 10; 16	L	124	124	149	152	190	225	265	320	396	400	450	450
		W	155	155	178	200	222	320	390	480	550	550	740	740
		R	78	83	95	100	115	143	172	204	248	264	299	320
		h	85	85	109	102	127	152	203	219	273	279	369	370
		H	227	227	251	281	342	441	545	633	777	781	1,082	1,082
		Weight (Kg)	9.5	10	12	21.5	35	71	118	205	350	370	800	820
	PN 25	L	124	124	149	159	200	234	277	336	415	419	467	467
		W	165	165	185	207	250	320	390	480	550	550	740	740
		R	78	85	95	105	127	159	191	223	261	293	325	358
		h	85	85	109	109	135	165	216	236	294	299	386	386
		H	227	227	251	287	350	454	558	649	796	801	1,099	1,099
		Weight (Kg)	11	11.5	13.5	23	41	81	138	233	390	425	855	870

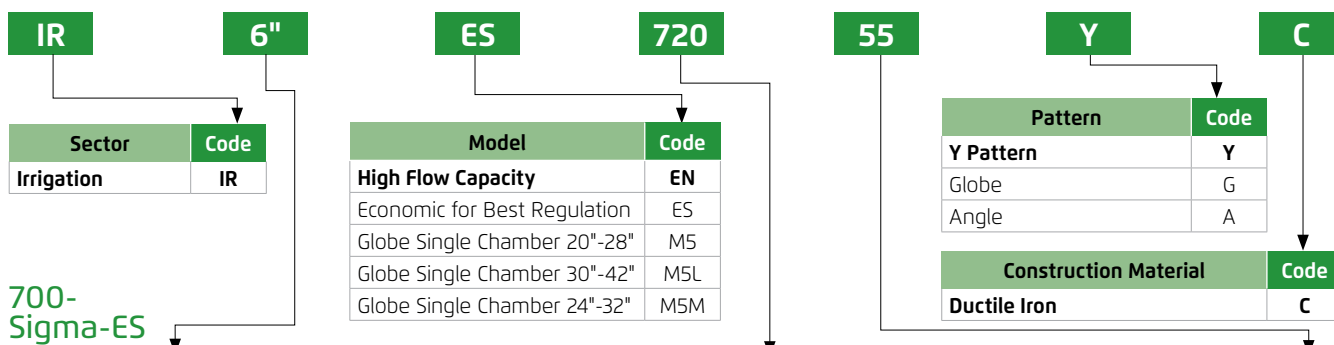
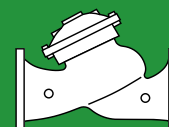
Threaded

Angle Pattern		DN	50	65	80
		inch	2"	2 ½"	3"
	BSP, NPT	L	121	140	159
		W	122	122	163
		R	40	48	55
		h	83	102	115
		H	225	242	294
		Weight (Kg)	5.5	7	15

Y Pattern		DN	40	50	65	80
		inch	1 ½"	2"	2 ½"	3"
	BSP, NPT	L	155	155	212	250
		W	122	122	122	163
		h	40	40	48	56
		H	201	202	209	264
		Weight (Kg)	5.5	5.5	8	17

Control Chamber Displacement Volume (liter)

DN	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600 - 1200
inch	1 ½"	2"	2 ½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	21" - 48"
700-ES Sigma Series	-	-	0.125	0.125	0.3	0.45	0.5	2.15	4.5	8.5	-	12.4	-	29.8	29.8
700-EN Sigma Series	-	0.125	-	0.3	0.45	-	2.15	4.5	8.5	12.4	-	29.8	-	-	-
700 Series	0.125	0.125	0.125	0.3	0.45	-	2.15	4.5	8.5	12.4	12.4	29.8	29.8	29.8	98
800 Series	0.04	0.04	0.04	0.12	0.3	-	1.1	2.3	4.0	8.0	8.0	18.7	18.7	18.7	-
700-M5 Series	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60
700-M5M Series	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117
700-M5L Series	-	-	-	-	-	-	-	-	-	-	-	-	-	-	230



700-Sigma-ES

Size	
DN65	2½"
DN80	3"
DN100	4"
DN125	5"
DN150	6"
DN200	8"
DN250	10"
DN300	12"
DN350	14"
DN400	16"
DN450	18"
DN500	20"
DN600	24"

700; 700-SIGMA-EN

Size	
DN40	1½"
DN50	2"
DN65	2½"
DN80	3"
DN100	4"
DN150	6"
DN200	8"
DN250	10"
DN300	12"

700-M5

Size	
DN500	20"
DN600	24"
DN700	28"

700-M5L

Size	
DN750	30"
DN800	32"
DN900	36"
DN1000	40"
DN1050	42"

700-M5M

Size	
DN600	24"
DN700	28"
DN750	30"

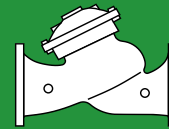
Primary Feature	Code
Basic Valve (Double Chambered Actuator)	700
Basic Valve (Single Chambered Actuator)	705
Solenoid Controlled Valve	710
Electronic Control Valve	718
Pressure Reducing Control Valve	720
Pressure Reducing & Sustaining Valve	723
Pressure Sustaining Valve	730
Pressure Relief Valve, Quick Type	73Q
Pressure Sustaining Valve Remote Sensing Type	730R
Surge Anticipating Valve	735
Differential Pressure Sustaining Valve	736
Booster Pump Control Valve	740
Booster Pump Control & Pressure Reducing Valve	742
Booster Pump Control & Pressure Sustaining Valve	743
Deep Well Pump Electric Control Valve	745
Booster Pump & Flow Control Valve	747
Level Control Valve	750
Level Control & Pressure Sustaining Valve	753
Level & Flow Control Valve	757
Flow Control Valve	770
Flow Control & Pressure Reducing Valve	772
Flow Control & Pressure Sustaining Valve	773
Flow Control, Pressure Reducing & Sustaining Valve	775
Burst Control Valve (Excessive Flow)	790
Burst Control & Pressure Reducing Valve	792
Check Valve (Lift Type)	70N
Strainer (Stone and Gravel Trap)	70F

Other primary features available on request.

Additional Feature (Multiple Options Permitted)	Code
No Additional Feature	00
Closing and Opening Speed Control	03
Hydraulic Override	09
High Sensitivity Pilot	12*
Electronic Control	18
Check Feature	20
Solenoid Controlled & Check Feature	25
Relief Override	3Q
Electrically Selected Multi-Level Setting	45
Downstream Over Pressure Guard	48
Closing Surge Prevention	49
Electronic Multi-Level Setting - Type 4R	4R
Hydraulic Remote Control	50
3-Way Hydraulic Relay, Normally Closed	54
Solenoid Controlled	55
Electric Override	59
Modulating Horizontal Float	60
Bi-Level Electric Float	65
Bi-Level Vertical Float	66
Modulating Vertical Float	67
Bi-Directional Flow	70
Altitude Pilot	80*
Modulating Altitude Control	82*
Sustaining Altitude Pilot	83*
Hydraulic Positioning	85*
Bi-Level Altitude Control	86*
Altitude Control with Bi-Directional Flow	87*
Setting Range	
2-6 meter; 7-20 feet Setting	M1
2-14 meter; 7-46 feet Setting	M6
5-22 meter; 17-72 feet Setting	M5
15-35 meter; 49-115 feet Setting	M4
25-70 meter; 82-230 feet Setting	M8
Closing at Downstream Pressure Drop	91
Double Cavitation Cage	C2
Independent Lift Check	2S
Proportional (Not available for M5 & M5L)	PD

Other additional features available on request.

* Select Setting Range



16

PG

4AC

PB

VI

End Connection		Code
Flanged	ISO-PN10	10
	ISO-PN16	16
	ISO-PN25	25
	ANSI-#150	A5
	ANSI-#300	A3
	BST-D	BD
	JIS-16	J6
	JIS-20	J2
Threaded	BSP	BP
	BSP-25 bar	PH
	NPT	NP
	NPT-25 bar	NH

Other end connections available on request.

Voltage-Main Valve Position (When Solenoid De-Energized)			Code
24VAC	-	Normally Closed	4AC
24VAC	-	Normally Open	4AO
24VAC	-	Last Position	4AP
24VDC	-	Normally Closed	4DC
24VDC	-	Normally Open	4DO
24VDC	-	Last Position	4DP
12VDC	-	Latch Solenoid S-985 (3 Leads)	1DS
12VDC	-	Latch Solenoid S-982 (2 Leads)	2DS
9VDC	-	Latch Solenoid	9DS

Other electrical ratings available on request.

Coating	Code
Polyester Green RAL 6017	PG

Other coatings available on request.

Tubing & Fittings	Code
Reinforced Plastic Tubing & Brass Fittings	PB
Copper Tubing & Brass Fittings	CB

Additional Attributes (Multiple Options Permitted)	Code
V-Port Throttling Plug	V
Large Control Filter	F
Valve Position Indicator	I
Electric Limit Switch	S
Valve Position Transmitter	Q
Flow Stem	M
Lifting Spring	L
Orifice Assembly	U
Paddle Flow Control Pilot (up to 12")	t
Pressure Separator	d
Double Chambered (Active)	B
3-Way Control	X
Manual Selector	Z
Flow Over the Seat	O
Low Preset Pressure (below 2 bar)	2
Plastic Pressure Test Point	5
Pressure Gauge	6
½" Anti Vacuum at Valve Downstream	7

Other additional attributes are available. Please consult our sales department for further information.

Reduction Ratios

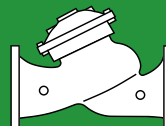
700-Sigma-ES

Valve Size	Plug Type	
	Flat Disc	V-Port
DN65; 2½"	2.8	3.0
DN80; 3"	2.8	3.0
DN100; 4"	2.6	2.8
DN125; 5"	2.5	2.8
DN150; 6"	2.4	2.7
DN200; 8"	2.4	2.6
DN250; 10"	2.3	2.5
DN300; 12"	2.3	2.5
DN350; 14"	2.3	2.5
DN400; 16"	2.2	2.4
DN450; 18"	2.2	2.3
DN500; 20"	2.2	2.3
DN600; 24"	2.2	2.3

700-Sigma-EN

Valve Size	Plug Type	
	Flat Disc	V-Port
DN40; 1½"	2.8	3.0
DN50; 2"	2.8	3.0
DN550; 2½"	2.8	3.2
DN80; 3"	2.7	3.0
DN100; 4"	2.4	2.6
DN150; 6"	2.4	2.6
DN200; 8"	2.3	2.5
DN250; 10"	2.3	2.5
DN300; 12"	2.2	2.4
DN400; 16"	2.2	2.3

- The reduction ratios are based on flow velocity of 2.0-3.0 m/sec.
- Reduction ratio may vary at extreme flow velocity & upstream pressure.



Basic Valve (Double/Single Chambered Actuator)

700 | 705

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Solenoid Controlled Valve

710

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Powered Opening Solenoid Controlled Valve

with Active Double Chamber

710-B

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Electronic Control Valve

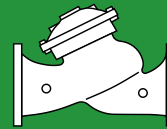
with Opening and Closing Speed Controls

718-03

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged





Electronic Control Valve

with Opening and Closing Speed Controls and Active Double Chamber

718-03-B

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Pressure Reducing Valve

720

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Proportional Pressure Reducing Valve

720-PD

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged

*For 1.5", 2", 2.5" special reduction ratio 2.2:1 is available (model 720-PD2), contact BERMAD for prices.



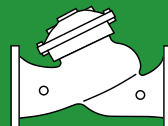
Pressure Reducing Valve

720-V

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged

Size	Connection
3"	DN80 Flanged
4"	DN100 Flanged





Pressure Reducing & Sustaining Valve

723

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Pressure Reducing Valve / Safety Valve

Double Chamber actuator with a 3 way pilot

720-XV

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged

Size	Connection
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Sizes 1½" up to 6" PA V-port is standard and include in the price
 Sizes 8" up to 16" tin bronze V-port include in the price



Flow Control Valve, Constant Downstream Pressure

with Downstream Orifice Plate

727-03-U

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



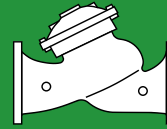
Quick Pressure Relief Valve

73Q

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged





Pressure Relief/Sustaining Valve

730

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Surge-Anticipating Control Valve with Mechanical Flow Stem

735-M

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Surge-Anticipating Control Valve with Solenoid Control and Mechanical Flow Stem

735-55-M

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



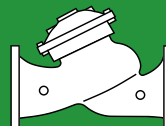
Differential Pressure Sustaining Valve

736

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged





Booster Pump Control Valve

with Opening and Closing Speed Controls and Limit Switch

740-03-S

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged

*Balancing Shaft Assembly "G" is included in PN16 valves larger than 8"/DN200, and in all PN25 valves.



Booster Pump Control & Pressure Sustaining Valve

with Opening & Closing Speed Control and Limit Switch

743-03-S

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Level Control Valve

with Modulating Horizontal Float

750-60

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Level Control Valve

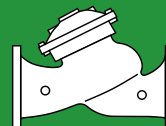
with Bi-Level Electric Float

750-65

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged





Level Control Valve

with Bi-Level Vertical Float and Indicator

750-66

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Level Control Valve

with Modulating Vertical Float

750-67

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Level Control Valve

With Altitude Pilot

750-80

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Standard Spring - M6

** add price for Altitude Pilot Spring M4 / M5 / M8

Level Control & Pressure Sustaining Valve

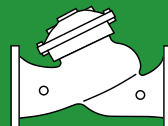
with Bi-Level Electric Float

753-65

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged





Level Control & Pressure Sustaining Valve

with Bi-Level Vertical Float

753-66

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Level Control & Pressure Sustaining Valve

with Modulating Vertical Float

753-67

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Level Control & Pressure Sustaining Valve

With Altitude Pilot

753-80

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Standard Spring - M6

** add price for Altitude Pilot Spring M4 / M5 / M8

Level and Flow Control Valve

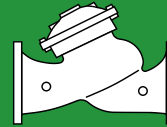
with Bi-Level Vertical Float

757-66-U

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged





Level and Flow Control Valve

With Altitude Pilot

757-80-U

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged

Standard Spring - M6

** add price for Altitude Pilot Spring M4 / M5 / M8



Flow Control Valve

with Opening and Closing Speed Controls

770-03-U

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Flow Control & Pressure Reducing

with Opening and Closing Speed Controls

772-03-U

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged



Burst Control Valve, Excessive Flow

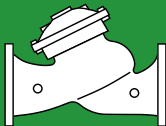
with Mechanical Flow Stem

790-M

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged

Size	Connection
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
18"	DN450 Flanged
20"	DN500 Flanged
24"	DN600 Flanged





Strainer (Stone and Gravel Trap)

70F

Size	Pattern	Connection
1½"	DN40	Y
2"	DN50	Y
2½"	DN65	Y
3"	DN80	Y
4"	DN100	Y
6"	DN150	Y

Size	Pattern	Connection
6"	DN150	Y
8"	DN200	Y
10"	DN250	Y
12"	DN300	Y
16"	DN400	Y



Check Valve

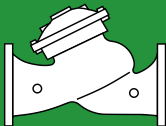
Lift Type

70N

Size	Connection
1½"	DN40
2"	DN50
2½"	DN65
3"	DN80
4"	DN100

Size	Connection
6"	DN150
8"	DN200
10"	DN250
12"	DN300
16"	DN400

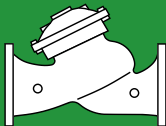




Special Configurations

Add-on from default configuration

Code	Description	Size Range
C-25 / C-A3	High Pressure Ductile Iron PN25/#300	1½" \ DN40
		2" \ DN50
		2½" \ DN65
		3" \ DN80
		4" \ DN100
		6" \ DN150
		8" \ DN200
		10" \ DN250
		12" \ DN300
		14" \ DN350
		16" \ DN400
		18" \ DN450
		20" \ DN500
		24" \ DN600
EV	Epoxy Blue with UV Protection	1½" \ DN40
		2" \ DN50
		2½" \ DN65
		3" \ DN80
		4" \ DN100
		6" \ DN150
		8" \ DN200
		10" \ DN250
		12" \ DN300
		14" \ DN350
		16" \ DN400
		18" \ DN450
		20" \ DN500
		24" \ DN600



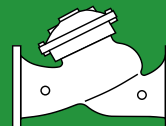
Additional Attributes

Add-ons - Valve/Control Accessories (refer to Ordering Guide)

Code	Description	Size Range
F	Large Control Filter	1½"-24" \ DN40-600
I	Valve Position Indicator Assembly	1½"-4" \ DN40-100
		6"-8" \ DN150-200
		10"-14" \ DN250-350
		16"-24" \ DN400-600
M	Flow Stem Assembly *	1½"-4" \ DN40-100
		6"-8" \ DN150-200
		10"-14" \ DN250-350
		16"-24" \ DN400-600
S	Limit Switch Assembly	1½"-4" \ DN40-100
		6"-8" \ DN150-200
		10"-14" \ DN250-350
		16"-24" \ DN400-600
N / n / L1	St.St. 316 Control Accessories / Panel Mounted Control Trim	1½"-24" \ DN40-600
Q	Analog Valve Position Transmitter	1½"-24" \ DN40-600
U	Orifice Assembly polymeric (POM)	1½" \ DN40
		2" \ DN50
		2½" \ DN65
		3" \ DN80
		4" \ DN100
		6" \ DN150
		8" \ DN200
		10" \ DN250
		12" \ DN300
		14" \ DN350
		16" \ DN400
		18" \ DN450
		20" \ DN500
NN	St. St. 316 Tubing & Fittings	1½"-14" \ DN40-350
		16"-24" \ DN400-600

*All prices based on EN sizes.





Additional Features

Add-ons - Control/Application

Code	Description	Size Range
03	Closing and Opening Speed Controls	1½"-14" \ DN40-350
0B	Preparation for Low Flow By-Pass (larger body ports)	1½"-3" \ DN40-80 4"-8" \ DN100-200
20	Check Feature	1½"-24" \ DN40-600
25	Independent Flow Check	1½"-2½" \ DN40-65
		3" \ DN80
		4" \ DN100
		6" \ DN150
		8" \ DN200
		10" \ DN250
		12"-14" \ DN300-350 16"-24" \ DN400-600
22/33	Pressure Reducing / Pressure Sustaining	1½"-4" \ DN40-100
		6"-14" \ DN150-350
		16"-24" \ DN400-600
48/49	Downstream Over Pressure Guard / Closing Surge Prevention	1½"-4" \ DN40-100
		6"-14" \ DN150-350
		16"-24" \ DN400-600
55/59	Solenoid Controlled / Electric Override	1½"-8" \ DN40-200
		10"-24" \ DN250-600
M5	Price Adder for M5 Mid-Range Altitude Pilot Spring	1½"-24" \ DN40-600
M4/M8	Price Adder for M4/M8 High-Range Altitude Pilot Spring	1½"-24" \ DN40-600

*All prices based on EN sizes.



Plug options for 700 & 800 series

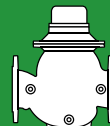
Throttling Plug and Cavitation Cages

Code	Description	Size Range
V	V-port Polymeric (POM) for 700-EN. For 700-ES use one size down	1½" \ DN40
		2" \ DN50
		2½" \ DN65
		3" \ DN80
		4" \ DN100
	V-Port polymeric (POM) for 700-ES 6"only	6" \ DN150
	V-port Polymeric (POM) for 700-EN	
	V-port Tin Bronze for 700-EN, for 700-ES use one size down	8" \ DN200
		10" \ DN250
		12" \ DN300
		16"-24" \ DN400-600
C1	Single Cavitation Cage	1½" \ DN40
		2" \ DN50
		2½" \ DN65
		3" \ DN80
		4" \ DN100
		6" \ DN150
		8" \ DN200
		10" \ DN250
		12" \ DN300
		14" \ DN350
C2	Double Cavitation Cage	16"-24" \ DN400-600
		1½" \ DN40
		2" \ DN50
		2½" \ DN65
		3" \ DN80
		4" \ DN100
		6" \ DN150
		8" \ DN200
		10" \ DN250
		12" \ DN300
		16"-14" \ DN400-350
		16"-24" \ DN400-600

*All prices based on EN sizes.







IR-900 Series Hydrometer



The BERMAD IR-900 hydrometer series is a unique product integrating both a vertical turbine Woltman-type water meter and a diaphragm actuated control valve. The BERMAD IR-900 was specially designed for irrigation infrastructure water networks and it considered to be the best solution in its class for its compact size and high performances.

The flow metering unit is vertical to the pipeline and includes an impeller with integrated inlet and outlet flow straighteners, eliminating the need for straightening distances, enabling vertical installation, and ensuring accuracy during control tasks. The raised seal seat results in remarkable cavitation resistance due to the valve body's distance from the flow.

IR-900 provides the full spectrum of metering functions – from simple visual readout, to pulse output for computerized data capture and control - while simultaneously allowing for numerous control valve features such as pressure, level and flow control.

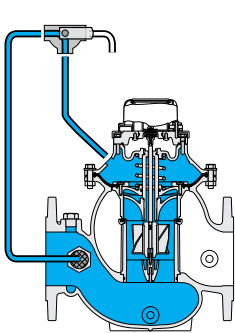
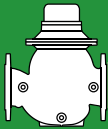
IR-900 Series range in diameter sizes of 1½"-8".

Features and Benefits

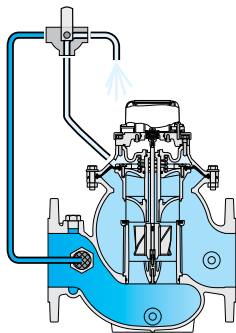
- Integrated "All-in-One" Control Valve
 - Saves space, cost and maintenance
- Hydraulically Controlled Hydrometer
 - Line pressure driven
- Magnetic Drive Register:
 - Analog rotating hands display
- Internal Inlet & Outlet Flow Straighteners
 - Saves on straightening distances of pipe
 - Maintains accuracy
- Integrated Flow Metering Calibration Device
 - Precise measurement
- User-Friendly Design
 - Simple in-line inspection and service

Typical Applications

- Computerized Irrigation Systems
 - Irrigation Control Head
 - In-Field Control Head
- Remote Flow Data Read-Out
 - Flow Monitoring & Leakage Control
 - Water Treatment Systems
 - Volumetric Irrigation Systems



Hydrometer Closed



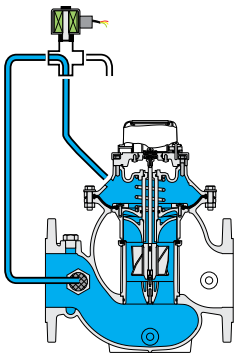
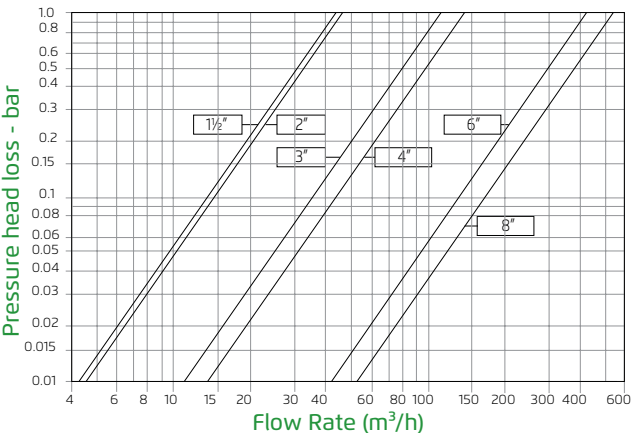
Hydrometer Open

On/Off Modes, Local Manual Control

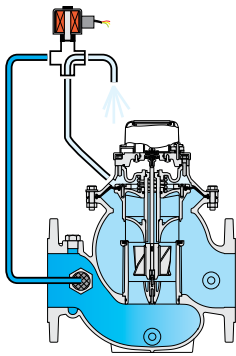
Line pressure is applied to the control chamber of the hydrometer, through the override Cock-Valve. This creates a hydraulic force that moves the valve to the closed position and provides drip tight sealing. Discharging pressure from the control chamber to the atmosphere causes the line pressure under the plug to open the hydrometer, measuring the flow rate.

Flow Chart

Globe Pattern



Solenoid Open
Hydrometer Closed

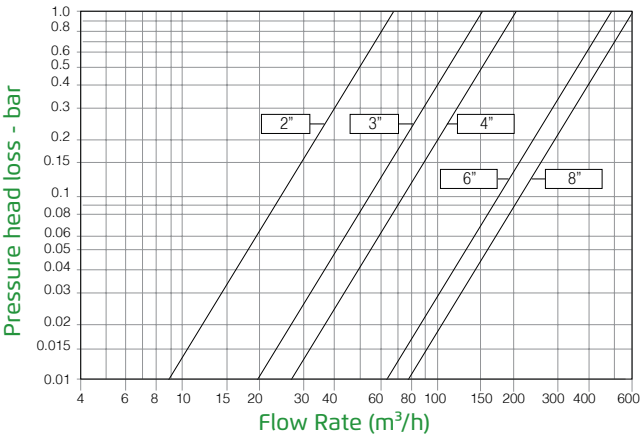


Solenoid Closed
Hydrometer Open

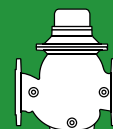
On/Off Modes, Solenoid Controlled

Line pressure is applied to the control chamber of the hydrometer, through the opened 3-way solenoid. This creates a hydraulic force that moves the valve to the closed position and provides drip tight sealing. Actuating the Solenoid causes it to switch, discharging pressure from the control chamber. This in turn causes the line pressure under the plug to open the hydrometer, measuring the flow.

90° Angle Pattern

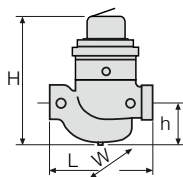


Size	DN Inch	40 1½	50 2	50 2	80 3	80 3	100 4	100 4	150 6	150 6	200 8	200 8
Pattern		G	G	A	G	A	G	A	G	A	G	A
KV		41	46	51	115	126	147	180	430	473	550	605



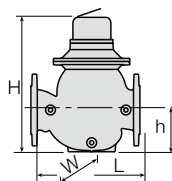
Globe Pattern

Connection Type		Threaded	
Size	DN	40	50
	inch	1½	2
L		250	260
W		137	137
H		270	277
h		95	95
Weight (Kg)		7.2	7.3



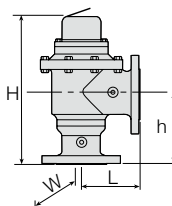
Globe Pattern

Connection Type		Flanged				
Size	DN	50	80	100	150	200
	inch	2	3	4	6	8
L		250	300	350	500	600
W		165	210	250	400	380
H		300	382	447	602	617
h		95	123	137	216	228
Weight (Kg)		12.7	23	30	70	93



90° Angle Pattern

Connection Type		Threaded	Flanged			
Size	DN	50	80	100	150	200
	inch	2	3	4	6	8
L		120	150	180	250	250
W		143	210	250	380	380
H		353	402	481	585	585
h		155	196	225	306	306
Weight (Kg)		7.9	25.5	35.8	76.4	82.2



Available Patterns, Size & End Connections

Connection Type							
Size	DN	40	50	80	100	150	200
	inch	1½	2	3	4	6	8
Threaded		G	G & A				
Flanged			G	G & A	G & A	G & A	G & A

G = Globe, A = Angle 90°

Technical Data

Connections Standard:

Flanged (FI): ISO 7005-2 (PN10 & 16)

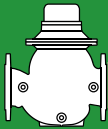
Threaded: BSPT (1.5", 2", 2.5")

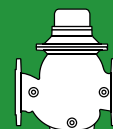
Operating Pressure Ranges:

PN16: 0.7-16 bar

For lower pressure requirements, consult Bermad local Application Engineer

Temperature: Water up to 30°C





900-M

IR

4"

Sector	Code
Irrigation	IR

Size	
1½"*	DN40*
2"	DN50
2½"	DN65*
3"	DN80
4"	DN100
6"	DN150
8"	DN200

* Globe only

920

Primary Features	Code
Basic Hydrometer	900
Water meter only no valve's part	901
Solenoid Controlled Hydrometer	910
Electronic Control Valve	918
Pressure Reducing Hydrometer	920
Pressure Reducing & Sustaining Hydrometer	923
Flow Control Valve, Constant Downstream Pressure	927
Pressure Sustaining Valve	930
Flow Control Hydrometer	970
Flow Control & Pressure Reducing Hydrometer	972
Flow Control & Pressure Sustaining Hydrometer	973
Flow Control, Pressure Reducing & Sustaining Hydrometer	975

Other primary features are available on request.

ME

55

Control Categories	Code
Hydrometer with magnetic drive & electronic register command	ME
Hydrometer with Magnetic Drive & Magnetic Register Command	MO

Additional Features	Code
No Additional Feature	00
Closing and Opening Speed-Control	03
Hydraulic Override	09
Electrically Selected Multi-Level Setting	45
Downstream Over Pressure Guard	48
Closing Surge Prevention	49
Hydraulic Remote Control	50
Normally Closed with Hydraulic Relay	54
Normally Closed with PC Hydraulic Relay	54X
Solenoid Controlled	55
Electric Override	59
Green-App Control	4G
St. St. 304 V-Port	VN

Other additional features are available on request.

G

Pattern	Code
Globe	G
Angle (2", 3", 4", 6" & 8")	A

Construction Materials	Code
Ductile Iron	C

C

I6

End Connections	Code	
Threaded	BSP Female Threaded (1½"-3"R Globe & 2" Angle)	BP
	NPT Female Threaded (1½"-3"R Globe & 2" Angle)	NP
Flanged (2"-10")	ISO-10	10
	ISO-16	16
	ANSI-150	A5
	BST-D	BD
Grooved	JIS-10	J1
	AST-E	SE
	ANSI C 606-81, Steel Pipe (3", 4" & 6")	VI

Other end connections are available on request.

* Globe only

Other additional features are available on request.

Other end connections are available on request.

Other primary features are available on request.



900-M

PG	4AC	PP	R03	KX																																																																																												
<table><tr><th>Coating</th><th>Code</th></tr><tr><td>Polyester Green RAL 6017</td><td>PG</td></tr></table> <p>Other coatings available on request.</p>	Coating	Code	Polyester Green RAL 6017	PG	<table><tr><th>Voltage-Main Valve Position (When Solenoid De-Energized)</th><th>Code</th></tr><tr><td>24VAC - Normally Closed</td><td>4AC</td></tr><tr><td>24VAC - Normally Open</td><td>4AO</td></tr><tr><td>24VAC - Last Position</td><td>4AP</td></tr><tr><td>12VDC - Latch Solenoid S-985 (3 Leads)</td><td>1DS</td></tr><tr><td>12VDC - Latch Solenoid S-982 (2 Leads)</td><td>2DS</td></tr><tr><td>9VDC - Latch Solenoid</td><td>9DS</td></tr></table> <p>Other electrical ratings are available on request.</p>	Voltage-Main Valve Position (When Solenoid De-Energized)	Code	24VAC - Normally Closed	4AC	24VAC - Normally Open	4AO	24VAC - Last Position	4AP	12VDC - Latch Solenoid S-985 (3 Leads)	1DS	12VDC - Latch Solenoid S-982 (2 Leads)	2DS	9VDC - Latch Solenoid	9DS	<table><tr><th>Pulse Type</th><th>Pulse Rate (Vol.)</th><th>Flow Rate</th><th>Totalizer (Vol.)</th><th>Code</th></tr><tr><td rowspan="16">Electronic Register</td><td rowspan="4">10 Liter</td><td rowspan="4">m³h</td><td rowspan="4">m³</td><td>M10</td></tr><tr><td>M20</td></tr><tr><td>M30</td></tr><tr><td>M40</td></tr><tr><td rowspan="4">100 Liter</td><td rowspan="4">lps</td><td rowspan="4">m³</td><td>L10</td></tr><tr><td>L20</td></tr><tr><td>L30</td></tr><tr><td>L40</td></tr><tr><td rowspan="4">1 m³</td><td rowspan="4">gpm</td><td rowspan="4">Gallon</td><td>G02</td></tr><tr><td>G03</td></tr><tr><td>G04</td></tr><tr><td>G05</td></tr><tr><td rowspan="4">10 m³</td><td rowspan="4">gpm</td><td rowspan="4">AF</td><td>F01</td></tr><tr><td>F02</td></tr><tr><td>F03</td></tr><tr><td>F04</td></tr><tr><td rowspan="6">Magnetic Register</td><td>No Pulse</td><td>No Pulse m³</td><td rowspan="6">m³</td><td>RNP</td></tr><tr><td rowspan="3">Reed Switch 1st Pulse</td><td>Reed 100 Liter</td><td>R02</td></tr><tr><td>Reed 1 m³</td><td>R03</td></tr><tr><td>Reed 10 m³</td><td>R04</td></tr><tr><td rowspan="2">Reed Switch 2nd Pulse</td><td>Reed 100L + Reed 1 m³</td><td>R23</td></tr><tr><td>Reed 1 m³ + Reed 10 m³</td><td>R34</td></tr></table>	Pulse Type	Pulse Rate (Vol.)	Flow Rate	Totalizer (Vol.)	Code	Electronic Register	10 Liter	m³h	m³	M10	M20	M30	M40	100 Liter	lps	m³	L10	L20	L30	L40	1 m³	gpm	Gallon	G02	G03	G04	G05	10 m³	gpm	AF	F01	F02	F03	F04	Magnetic Register	No Pulse	No Pulse m³	m³	RNP	Reed Switch 1st Pulse	Reed 100 Liter	R02	Reed 1 m³	R03	Reed 10 m³	R04	Reed Switch 2nd Pulse	Reed 100L + Reed 1 m³	R23	Reed 1 m³ + Reed 10 m³	R34	<table><tr><th>Additional Attributes Unlimited Selection</th><th>Code</th></tr><tr><td>3-Way Control Loop</td><td>X</td></tr><tr><td>Plastic Control Accessories</td><td>K</td></tr><tr><td>Metal Control Accessories</td><td>R</td></tr><tr><td>Orifice Assembly</td><td>U</td></tr><tr><td>Paddle Flow Control Pilot</td><td>V</td></tr><tr><td>Large Control Filter</td><td>F</td></tr><tr><td>Manual Selector</td><td>Z</td></tr><tr><td>Low Preset Pressure (below 2 bar)</td><td>2</td></tr><tr><td>Plastic Pressure Test Point</td><td>5</td></tr><tr><td>Pressure Gauge</td><td>6</td></tr><tr><td>½" Anti Vacuum at Valve Downstream</td><td>7</td></tr></table> <p>Other additional attributes are available. Please consult Customer Service for further information.</p>	Additional Attributes Unlimited Selection	Code	3-Way Control Loop	X	Plastic Control Accessories	K	Metal Control Accessories	R	Orifice Assembly	U	Paddle Flow Control Pilot	V	Large Control Filter	F	Manual Selector	Z	Low Preset Pressure (below 2 bar)	2	Plastic Pressure Test Point	5	Pressure Gauge	6	½" Anti Vacuum at Valve Downstream	7
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Hydrometer Magnetic Register Pulses & size availability

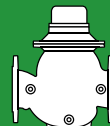
Size	Pulse per	100 Liter	1m ³	10m ³
1½"-4"; DN40-DN100		Y	Y	N
6"-8"; DN150-DN200		N	Y	Y

Note: Pulse combinations are available according to "Pulse Rate Table".

Hydrometer Electronic Register Pulses & Size availability

Size	Pulse per	1L	10L	100L	1m ³	10m ³
1½"; DN40		Y	Y	Y	Y	N
2"; DN50		Y	Y	Y	Y	N
2½"; DN65		Y	Y	Y	Y	N
3"; DN80		Y	Y	Y	Y	N
4"; DN100		N	Y	Y	Y	N
6"; DN150		N	N	Y	Y	Y
8"; DN200		N	N	N	Y	Y

Note: For more pulseoptions and complementary info, please refer to the electronic register IOM or consult with BERMAD



Hydrometer

Magnetic drive with an electronic register (ME) and composite control loop (K)

IR-900-ME-3W-KXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		A Threaded
2½"	DN65	G Flanged

Size	Pattern	Connection
3"	DN80	G Flanged
	A	Flanged
4"	DN100	G Flanged
		A Flanged



Hydrometer

Magnetic drive with an electronic register (ME) and metal fittings (R)

IR-900-ME-3W-RXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		A Threaded
2½"	DN65	G Flanged
3"	DN80	G Flanged
		A Flanged

Size	Pattern	Connection
4"	DN100	G Flanged
	A	Flanged
6"	DN150	G Flanged
		A Flanged
8"	DN200	G Flanged
		A Flanged



Hydrometer, Solenoid Controlled

Magnetic drive with an electronic register (ME) and composite control loop (K)

IR-910-ME-3W-KX

Solenoid S-390-3W

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		A Threaded
2½"	DN65	G Flanged

Size	Pattern	Connection
3"	DN80	G Flanged
	A	Flanged
4"	DN100	G Flanged
		A Flanged



Hydrometer, Solenoid Controlled

Magnetic drive with an electronic register (ME) and metal fittings (R)

IR-910-ME-3W-RX

Solenoid 3W

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
		A Threaded
2½"	DN65	G Flanged
3"	DN80	G Flanged
		A Flanged

Size	Pattern	Connection
4"	DN100	G Flanged
	A	Flanged
6"	DN150	G Flanged
		A Flanged
8"	DN200	G Flanged
		A Flanged





Pressure Reducing Hydrometer

Magnetic drive with an electronic register (ME) and composite control loop (K), 3-Way

IR-920-ME-3W-KXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
	A	Threaded
2½"	DN65	G Flanged

Size	Pattern	Connection
3"	DN80	G Flanged
	A	Flanged
4"	DN100	G Flanged
		A Flanged



Pressure Reducing Hydrometer with Hydraulic Control

Magnetic drive with an electronic register (ME) and composite control loop (K), 3-Way

IR-920-ME-50-3W-KXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
	A	Threaded
2½"	DN65	G Flanged

Size	Pattern	Connection
3"	DN80	G Flanged
	A	Flanged
4"	DN100	G Flanged
		A Flanged



Pressure Reducing Hydrometer, Solenoid Controlled

Magnetic drive with an electronic register (ME) and composite control loop (K), 3-Way

IR-920-ME-55-3W-KX

Solenoid S-390

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
	A	Threaded
2½"	DN65	G Flanged

Size	Pattern	Connection
3"	DN80	G Flanged
	A	Flanged
4"	DN100	G Flanged
		A Flanged



Pressure Reducing & Sustaining Hydrometer

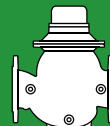
Magnetic drive with an electronic register (ME) and composite control loop (K), 3-Way

IR-923-ME-3W-KXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
	A	Threaded
2½"	DN65	G Flanged

Size	Pattern	Connection
3"	DN80	G Flanged
	A	Flanged
4"	DN100	G Flanged
		A Flanged





Pressure Sustaining Hydrometer

Magnetic drive with an electronic register (ME) and composite control loop (K), 3-Way

IR-930-ME-3W-KXZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		A Threaded
2½"	DN65	G Flanged

Size	Pattern	Connection
3"	DN80	G Flanged
		A Flanged
4"	DN100	G Flanged
		A Flanged



Flow Control Hydrometer

Magnetic drive with an electronic register (ME) and composite control loop (K)

IR-970-ME-2W-KVZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
	A	Threaded
2½"	DN65	G Flanged

Size	Pattern	Connection
3"	DN80	G Flanged
		A Flanged
4"	DN100	G Flanged
		A Flanged



Flow Control Hydrometer

Magnetic drive with an electronic register (ME) and metal control loop (R)

IR-970-ME-50-2W-RVZ

Size	Pattern	Connection
1½"	DN40	G Threaded
2"	DN50	G Threaded
		G Flanged
	A	Threaded
2½"	DN65	G Flanged
3"	DN80	G Flanged
		A Flanged

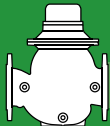
Size	Pattern	Connection
4"	DN100	G Flanged
		A Flanged
6"	DN150	G Flanged
		A Flanged
8"	DN200	G Flanged
		A Flanged



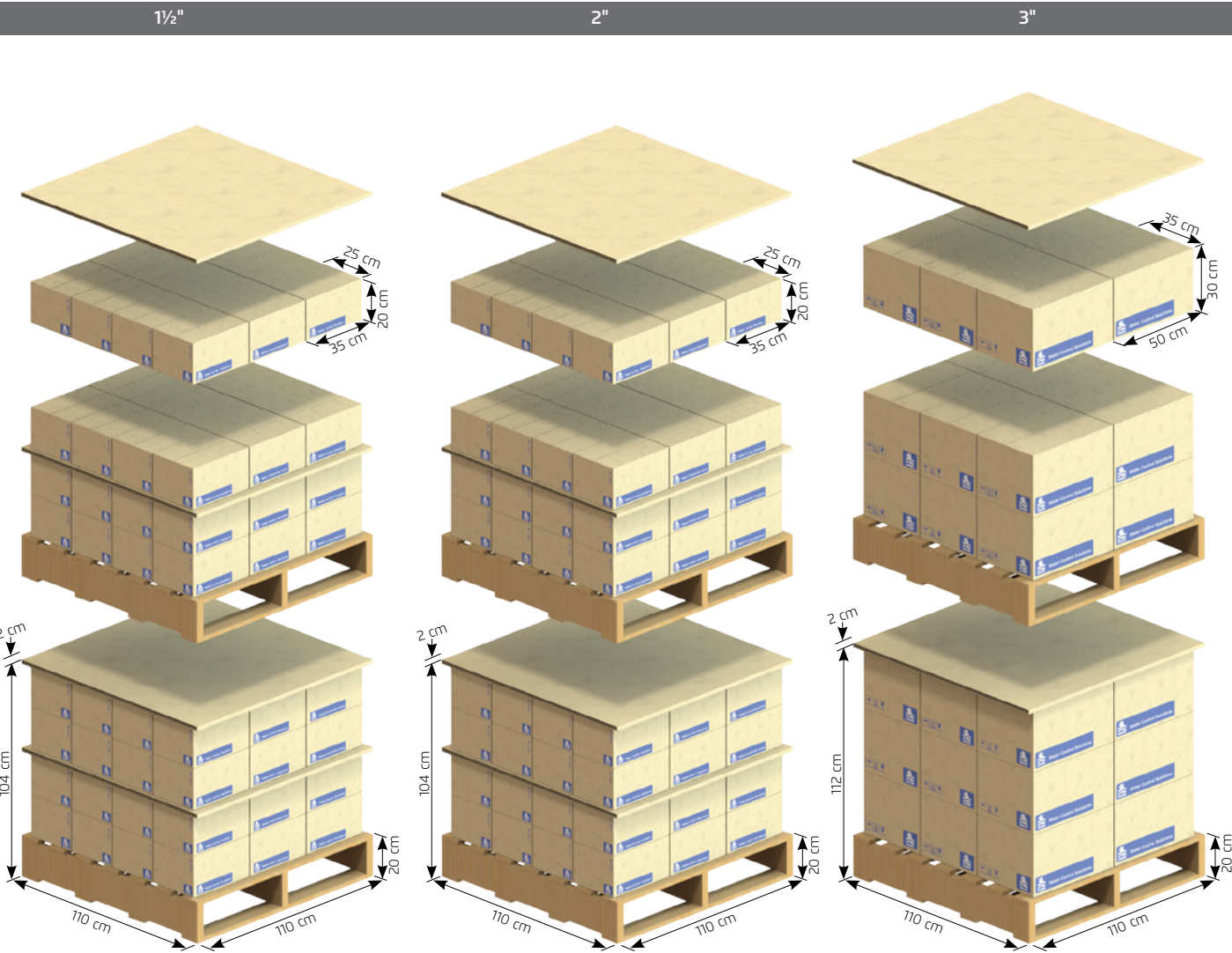


Additional Features & Options - Suffix Code-K (Plastic) & R (Metal) Accessories

Code	Description	Size Range
50-3W-P	3W Hydraulic Control (Shuttle Valve) - Plastic	1½"-4" \ DN40-100
50-2W-P	2W Hydraulic Control (2-Way Hydraulic Relay) - Plastic	1½"-4" \ DN40-100
50-3W-M	3W Hydraulic Control (Shuttle Valve) - Metal	3"-8" \ DN80-200
50-2W-M	¾" 2-Way Hydraulic Relay (2W-HRV) - Metal	3"-8" \ DN80-200
54-3W-P	1½" 3-Way Hydraulic Relay (3W-HRV) - Plastic	1½"-4" \ DN40-100
55-P	Solenoid Controlled - Plastic	1½"-4" \ DN40-100
55-M	Solenoid Controlled - Metal	1½"-4" \ DN40-100 6"-8" \ DN150-200
Z	Manual Selector	1½"-4" \ DN40-100 6"-8" \ DN150-200
RP	Reed-switch Electric Pulse Transmitter (for Magnetic Register)	1½"-8" \ DN40-200
R	Metal Tubing & Fittings (add to plastic standard)	1½"-2" \ DN40-50 3"-4" \ DN80-100



Packing Specifications



Per Box

Valve Size	Box					
	Units	Length [cm]	Width [cm]	Height [cm]	Weight [kg]	Volume [m ³]
1 1/2"	1	35	25	20	7.4	0.02
2"	1	35	25	20	7.6	0.02
3" Flanged	1	50	35	30	23.72	0.05

Per Pallet

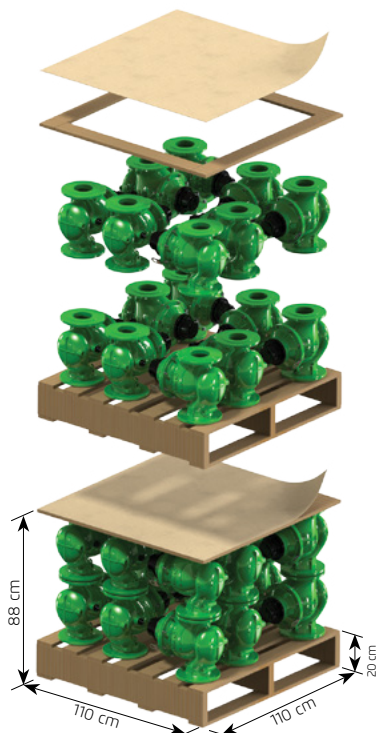
Valve Size	Pallet							
	Number of Boxes	Number of Levels	Number of Units	Length [cm]	Width [cm]	Height [cm]	Gross Weight [kg]	Volume [m ³]
1 1/2"	48	4	48	110	110	104	376	1.3
2"	48	4	48	110	110	104	385	1.3
3" Flanged	18	3	18	110	110	112	447	1.3



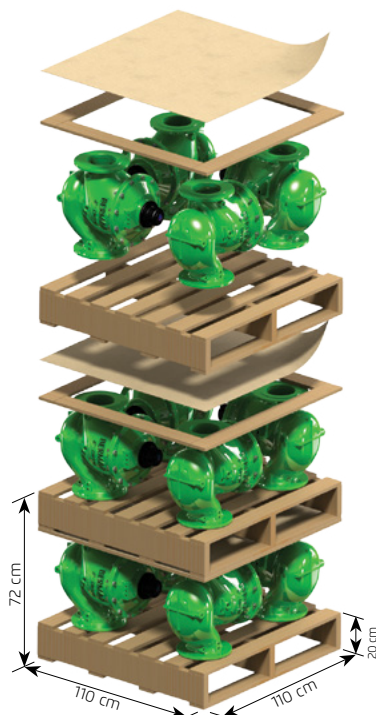


Packing Specifications

4"



6"



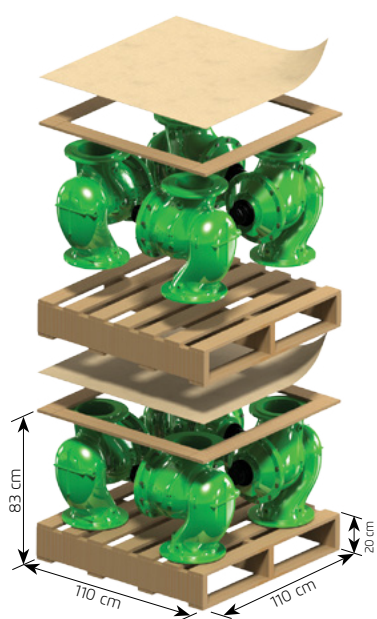
4"

No. of Layers	2
No. of Units	16
Length [cm]	110
Width [cm]	110
Height [cm]	88
Gross Weight	500
Volume [m ³]	1.06

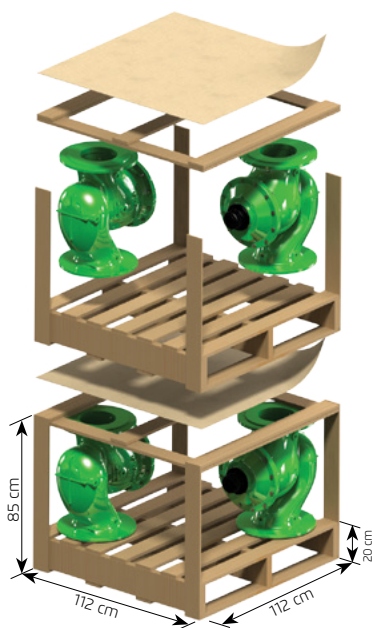
6"

No. of Layers	1
No. of Units	4
Length [cm]	110
Width [cm]	110
Height [cm]	72
Gross Weight	300
Volume [m ³]	0.87

8"



10"



8"

No. of Layers	1
No. of Units	4
Length [cm]	110
Width [cm]	110
Height [cm]	83
Gross Weight	388
Volume [m ³]	1.00

10"

No. of Layers	1
No. of Units	2
Length [cm]	112
Width [cm]	112
Height [cm]	85
Gross Weight	300
Volume [m ³]	1.07



PRV Series

The BERMAD Direct Acting PRV is the only Adjustable composite PRV designed for Irrigation in Agriculture Projects. Made of Composite material, BERMAD PRV presents high mechanical strength and superior hydraulic performance.

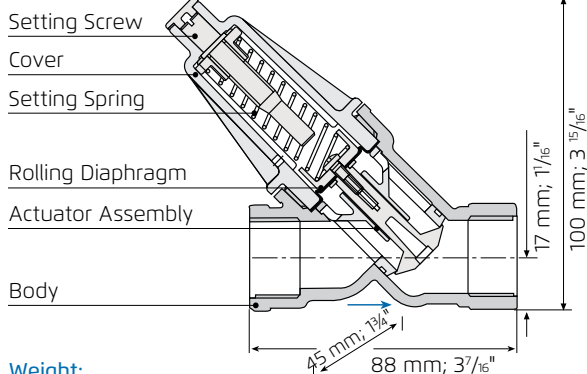
The BERMAD PRV is actuated by a pressure responsive diaphragm, which seeks to reach equilibrium between hydraulic and set spring force. It reduces higher upstream pressure to lower constant downstream pressure regardless of fluctuating demand or varying upstream pressure.

Features and Benefits

- Advanced Construction Materials
 - High mechanical strength
 - Proven pressure, flow and weather resistance
- Adjustable Direct Acting Pressure Reducer
 - Constant downstream pressure
 - Immediate response
 - Adjustable according to season and stage
- Composite Body and Trim
 - Highly durable, chemical and cavitation resistant
 - Minimizes friction
- Unitized Rolling Diaphragm and Guided Plug
 - Accurate and stable regulation
 - Prevents diaphragm distortion
- User-Friendly Design
 - Can be installed at any orientation
 - Simple in-line inspection and service



¾" - PRV



Weight:
0.13 Kg; 0.29 lbs.

Technical Data

Size: ¾"; DN20

End Connections: Threaded

Inlet: Female BSP; NPT

Outlet: Female BSP; NPT or Male BSPT; NPT

Flow Range: 0.2-5 m³/h; 0.9-22 gpm

Pressure Ratings: 10 bar; 150 psi

Operating Pressure Range: 0.7-9 bar; 10-130 psi

Temperature: Water up to 60°C; 140°F

Materials:

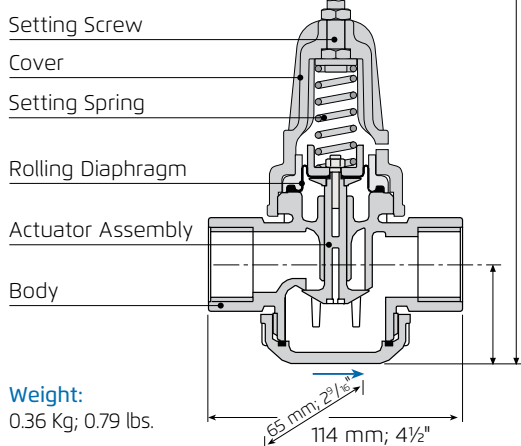
Body, Cover and Actuator Assembly:

PA6 & 30% GF

Diaphragm: NBR (Buna-N), Reinforced Nylon Fabric

Spring: Stainless Steel

1" - PRV



Weight:
0.36 Kg; 0.79 lbs.

Technical Data

Size: 1"; DN25

End Connections: Female Threads BSP; NPT

Flow Range: 0.1-6 m³/h; 0.4-22 gpm

Pressure Ratings: 10 bar; 150 psi

Operating Pressure Range: 0.7-9 bar; 10-130 psi

Temperature: Water up to 60°C; 140°F

Materials:

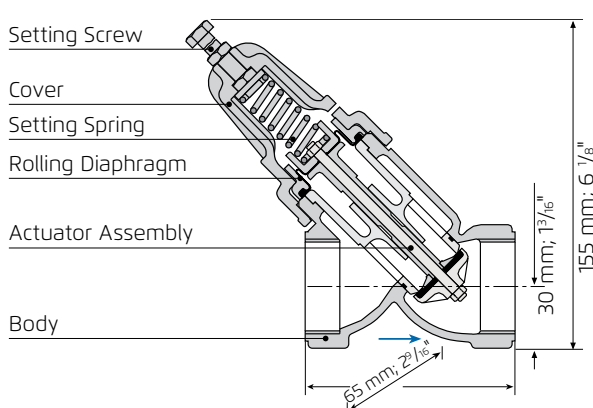
Body, Cover and Actuator Assembly:

PA6 & 30% GF

Diaphragm: NBR (Buna-N), Reinforced Nylon Fabric

Spring: Stainless Steel

1½" - PRV



Technical Data

Size: 1½"; DN40

End Connections: Female Threads BSP; NPT

Flow Range: 0.5-8 m³/h; 1.8-29 gpm

Pressure Ratings: 10 bar; 150 psi

Operating Pressure Range: 0.7-9 bar; 10-130 psi

Temperature: Water up to 60°C; 140°F

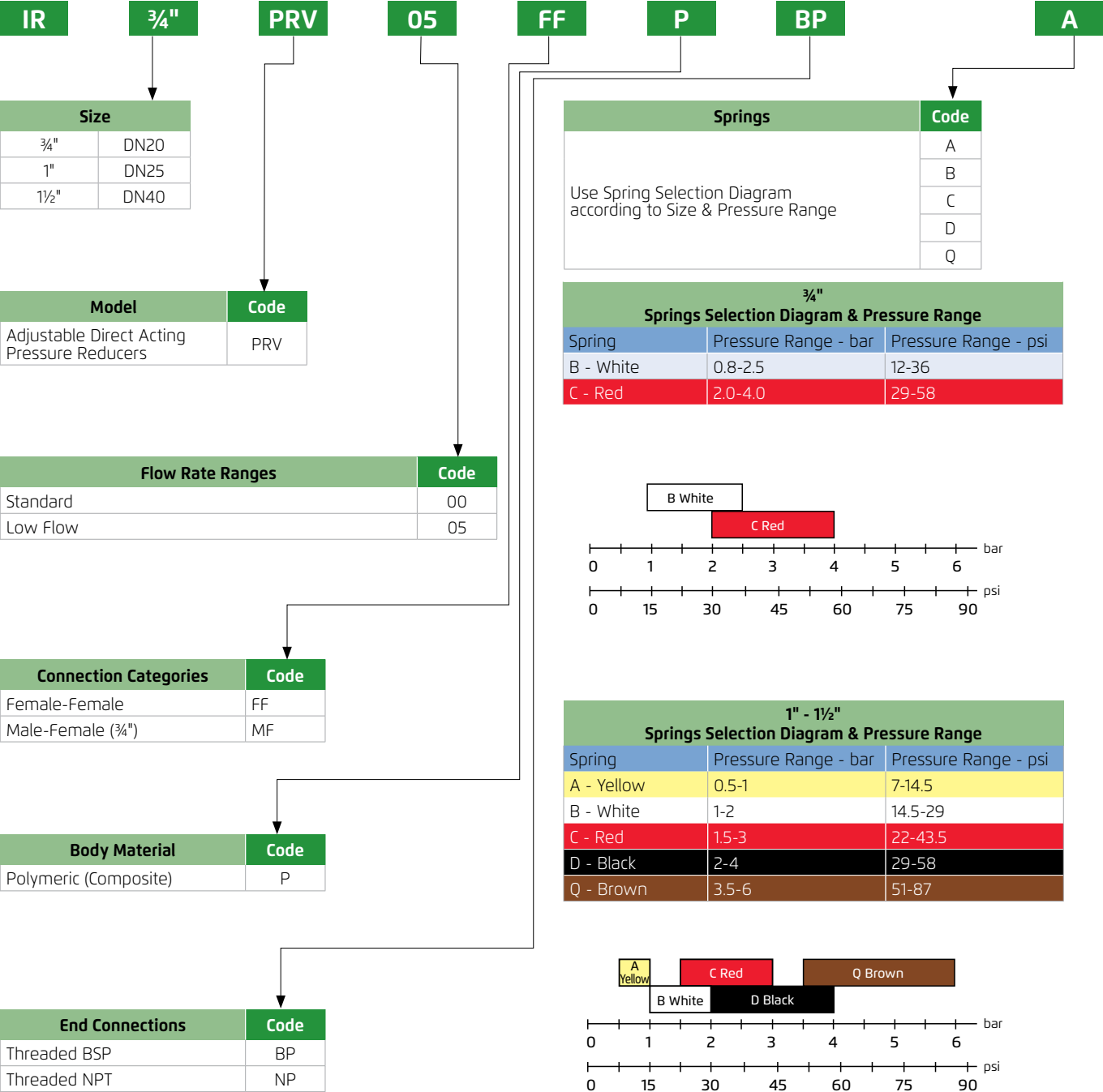
Materials:

Body, Cover and Actuator Assembly:

PA6 & 30% GF

Diaphragm: NBR (Buna-N), Reinforced Nylon Fabric

Spring: Stainless Steel





Adjustable Direct-Acting Pressure Reducer

Threaded Male - Female, Female - Female

3/4"-PRV

Flow - 0.2-5.0 m³/h, 0.9-22.0 gpm

Spring - Color	Downstream Pressure Range- bar	Downstream Pressure Range - psi
B - White	0.8 - 2.5	12 - 36
C - Red	2.0 - 4.0	29-58



Adjustable Direct-Acting Low-Flow Pressure Reducing

Reducer Threaded Male - Female,

3/4"-PRV-05

Flow - 0.01 - 3.0 m³/h, 0.04 - 13.0 gpm

Spring - Color	Downstream Pressure Range- bar	Downstream Pressure Range - psi
B - White	0.8 - 2.5	12 - 36
C - Red	2.0 - 4.0	29-58



Adjustable Direct-Acting Pressure Reducer

Threaded Female - Female

1"-PRV

Flow - 0.5 - 6.0 m³/h , 1.8 - 22.0 gpm

Spring - Color	Downstream Pressure Range- bar	Downstream Pressure Range - psi
B - White	1 - 2	14.5 - 29
C - Red	1.5 - 3.0	22 - 43.5
D - Black	2.0 - 4.0	29 - 58
Q - Brown	3.5 - 6.0	51 - 87



Adjustable Direct-Acting, Low Flow Pressure Reducer

Threaded Female - Female

1"-PRV-05

Flow - 0.1 - 6.0 m³/h , 0.4 - 22.0 gpm

Spring - Color	Downstream Pressure Range- bar	Downstream Pressure Range - psi
C - Red	1.5 - 3.0	22 - 43.5
D - Black	2.0 - 4.0	29 - 58
Q - Brown	3.5 - 6.0	51 - 87





Adjustable Direct-Acting Pressure Reducer

Plastic Threaded Female - Female

1½"-PRV

Flow - 0.5 - 8.0 m³/h , 1.8- 29.0 gpm

Spring - Color	Downstream Pressure Range- bar	Downstream Pressure Range - psi
B - White	1.0 - 2.0	14.5- 29
C - Red	1.5 - 3.0	22 - 43.5
D - Black	2.0 - 4.0	29 -58
Q - Brown	3.5 - 6.0	51 - 87

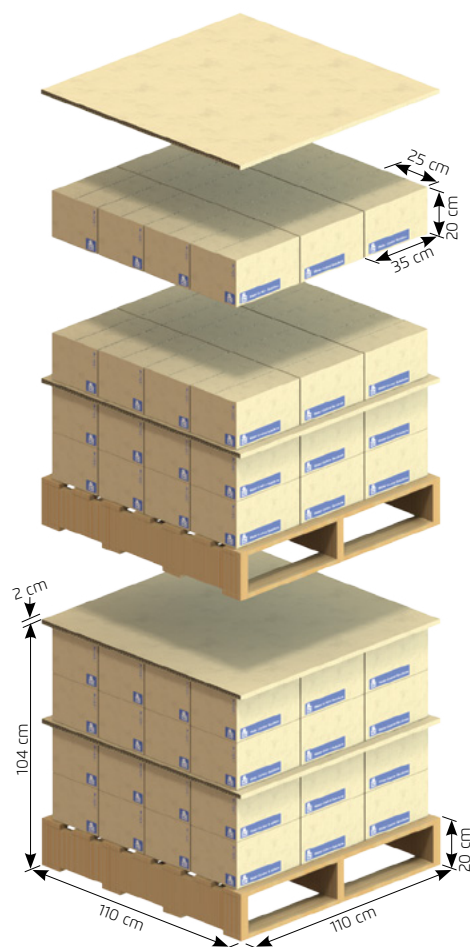
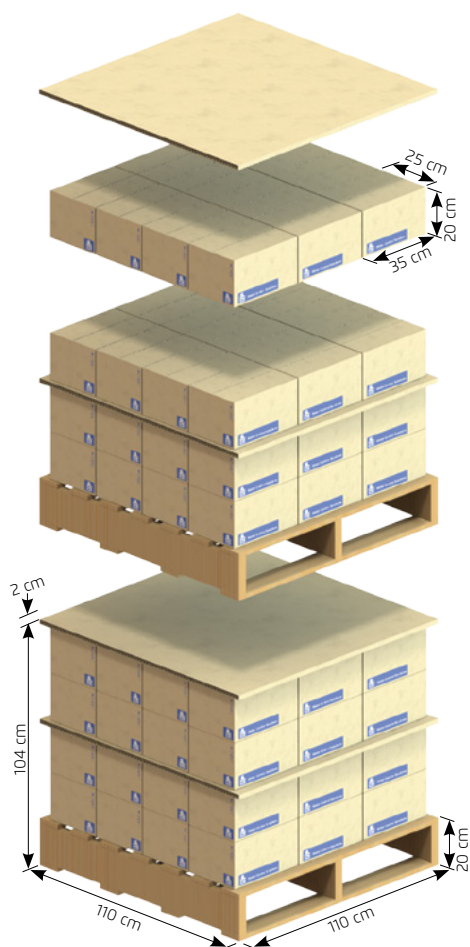




Packing Specifications

¾", 1"

1½" Plastic



Per Box

Valve Size	Box					
	Units	Length [cm]	Width [cm]	Height [cm]	Weight [kg]	Volume [m ³]
¾"	50	35	25	20	6.6	0.02
1"	15	35	25	20	4.9	0.02
1½" Plastic	10	35	25	20	5.1	0.02

Per Pallet

Valve Size	Pallet							
	Number of Boxes	Number of Levels	Number of Units	Length [cm]	Width [cm]	Height [cm]	Gross Weight [kg]	Volume [m ³]
¾"	48	4	2400	110	110	104	336	1.3
1"	48	4	720	110	110	104	255	1.3
1½" Plastic	48	4	480	110	110	104	265	1.3



Mini Pilots - Composite
















	Code	Description
	PC-20-A-P	2-Way Pressure Reducing Mini Pilot
	PC-30-A-P	2-Way Pressure Sustaining Mini Pilot
	PC-3Q-A-P	2-Way Pressure Relief Mini (Quick Type) Pilot
	PC-70-P	2-Way Flow Control Pilot (Paddle Type)
	PC-S-A-P	2/3-Way Mini Pilot "Servo"
	PC-SD-A-P	2/3-Way Differential Pressure Sensing/Flow Control Pilot "Servo"
	PC-SHARP-X-P	3-Way Sharp Multi-Propose Mini Pilot
	PC-SHARP-XD-P	3-Way Differential Pressure Sensing Mini Pilot

Mini Pilots - Metal

	Code	Description
	PC-20-A-MP	2-Way Pressure Reducing Mini Pilot , Metal base - Plastic cover
	PC-30-A-MP	2-Way Pressure Sustaining Mini Pilot , Metal base - Plastic cover
	PC-3Q-A-MP	2-Way Pressure Relief Mini (Quick Type) Pilot, Metal base - Plastic cover
	PC-70-MP	2-Way Flow Pilot (Paddle Type), Metal base - Plastic cover
	PC-S-A-MP	2/3-Way Mini Pilot "Servo", Metal base - Plastic cover
	PC-SD-A-MP	2/3-Way Differential Pressure Sensing/Flow Control Pilot "Servo", Metal base - Plastic Cover
	PC-SHARP-X-MP	3-Way Multi-Propose Mini Pilot






Pilots, Floats & Relays

	Code	Description		
	2	Pressure Reducing Pilot - Brass		PBLX 3-Way Positioning Pilot - SST/Brass COMING SOON
	IR-2PBL-BPP	Pressure Reducing Pilot - Bronze & Polymeric		50-M $\frac{3}{8}$ " 2-Way Hydraulic Relay (2W-HRV) - Brass
	3	Pressure Sustaining Pilot - Brass		50-P $\frac{1}{8}$ " 2-Way Hydraulic Relay - Plastic (2W-HRV)
	IR-3PBL-BPP	Pressure Sustaining Pilot - Bronze & Polymeric		54-P-Galit $\frac{1}{8}$ " 3-Way Hydraulic Relay (3W-HRV) - Plastic
	60	2-Way Horizontal Float Metal - SST		54-M $\frac{3}{8}$ " 3-Way Hydraulic Relay (3W-HRV) - Brass
	60P	Modulating Horizontal Float Assembly - Plastic		
	66	4-Way Bi-Level Vertical Float - SST		
	67	2-Way Modulating Vertical Float - Brass		
	8-M1/M6	Altitude Pilot - Brass		
	X-B	3-Way Positioning Pilot - Brass		



Accessories

	Code	Description
	Flow Restriction 1	8x8mm Plastic One-Way Flow Restriction Assy (Blue, Grey & Red)
	Flow Restriction 2	8 x 1/8"x 8 "T" Plastic Assy with Restriction Orifice (Grey & Red)
	6	Pressure Gauge up to 16 bar
	20-P	8x8mm Plastic Check Valve Assy (Blue & Grey)
	50-XP-8x8x8 1408P30800	8x8x8 Plastic Shuttle Valve Assy -T
	50-XM	1/8" Metal Pressure Selecting Hydraulic Control (Shuttle Valve)
	Inline Filter-C	1/4" In Line Filter Plastic Body
	Inline Filter 3/8"	3/8" Self Flushing In-Line Filter - SST
	Inline Filter 1/4"	1/4" Self Flushing In-Line Filter - SST
	F-3/8"	3/8" Large Control Filter - Brass
	Y	3/8" OR Y-Strainer NPT Brass 500 Micron




Z - SY3	1/8" 3-Way Selector
Z - SY6	1/4" 3-Way Selector
Z - SYP	1/4" Composite 3-Way Selector COMING SOON
U2	2" Integrated orifice polymeric (POM)
U3	3" Integrated orifice polymeric (POM)
U4	4" Integrated orifice polymeric (POM)
U6	6" Integrated orifice polymeric (POM)
U8	8" Integrated orifice polymeric (POM)
Safety Cap for pilot	Safety cap for calibration bolt





Control Tube Fittings

	Code	Description			
	FT 08 360802PG02	Coupler for 8mm Tube		FT 78 360402PG00	Straight Connector 1/4\"-8mm
	FT 11 3608PA8A05	Bushing Male-Female 1/8\" - 1/8\"		FT 88 365600PG00	Tube Straight Connector 8mm - 8mm
	FT 18 360802PG00	Straight Connector 1/8\"-8mm		FT 98 36080TPG00	T-Connector for Tube 8mm-8mm-8mm
	FT 28 360801PG00	Elbow Connector 1/8\"-8mm		FT 98/1 360804PG00	T-Connector for Tube 8mm-1/8\"-8mm
	FT 30 3602070000	1/2\" BSPT Male Plug		FT 98/2 360803PG00	T-Connector for Tube 8mm-8mm - 1/8\"
	FT 32 3638070200	3/8\" NPT Male Plug		4-8mm 3604030401-T	Downstream Manifold, 1/4M X 1/4F X 8mm COMING SOON
	FT 34 36040P0000	1/4\" NPT Male Plug		8-8mm 3604030801-T	Upstream Manifold, 1/4M X 1/8F X 8mm COMING SOON
	FT 38 3608070000	1/8\" NPT Male Plug			
	FT 48 3604PA8A05	Bushing Male-Female 1/4\" - 1/8\"			
	FT 58 360401PG00	Elbow Connector 1/4\"-8mm			



Air Valve Series

BERMAD advanced high quality line of Air Valves joins its extensive line of hydraulic control valves to create comprehensive control solutions for a variety of irrigation networks and operating conditions.

Based on BERMAD Air valves advanced aerodynamic design, system engineers and end-users can now design and install far more optimized solutions for their system requirements.

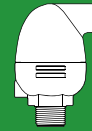
The line of BERMAD Air Valves includes Composite Air Valves and Metal Air Valves with improved sealing in low pressure conditions. Specifically designed for irrigation applications.

Features and Benefits

- Higher flow rates
- Low pressure sealing
- Minimal spray effect
- Built-in surge protection (anti-slam feature)
- Design in compliance with functional standards.
- Field proven designed for use in irrigation applications with water quality such as river water, channel water, dam water or treated effluent with high reliability

Typical Applications

- Main Irrigation Networks: Protection against air accumulation and vacuum formation downstream of pumps, along supply lines and at elevations in main irrigation networks.
- Irrigation Control Heads: Protection against air accumulation and vacuum formation at filtration and fertilization stations and downstream of main control valves.
- Infield Systems: Protection against air accumulation and vacuum formation in proximity to water meters and automatic regulators.
- Landscape Irrigation: Protection against air accumulation and vacuum formation.
- Pumping stations: Maximizing pumping efficiency, priming capabilities and reducing the possibility of pressure surges during power failure modes.



Automatic Air Valves – A10, A30

- Body material – Glass-reinforced Polyamide
- Inlet sizes – DN20 – DN25; ¾" – 1"
- Connections – Threaded Male BSPT / NPT
- Outlet – Sideways
- Pressure rating – ISO PN10/16, ANSI 150
- Operating pressure range: 0.1 – 10/16 bar, 1.5 – 150/230 psi (A10/A30)
- Operating temperature: Water up to 60°C; 140°F
- Benefits – effective automatic air release, low pressure sealing



Kinetic (Air / Vacuum) Air Valves – K10

- Body material – Glass-reinforced Polyamide
- Inlet sizes – DN20 – DN50; ¾" – 2"
- Connections – Threaded Male DN20 – DN25; ¾" – 1" BSPT / NPT
Threaded Female DN50; 2" BSPT / NPT
- Pressure rating – ISO PN10, ANSI 150
- Operating pressure range: 0.1 – 10bar, 1.5 – 150psi
- Operating temperature: Water up to 60°C; 140°F
- Benefits – effective air relief and intake, low pressure sealing



Combination Air Valves - C10, C30

- Body material – Glass-reinforced Polyamide
- Inlet sizes – DN20-DN80; ¾"-3"
- Connections – Threaded Male DN20 – DN50; ¾" – 2" BSPT / NPT,
Flanged DN50 – DN80; 2", 3"
- Outlet – Sideways, for inlet DN50-80; 2-3" the outlet is DN50; 2" female threaded.
- Pressure rating – ISO PN10/16, ANSI 150
- Operating pressure range: 0.1 – 10/16 bar, 1.5 – 150/230 psi
- Operating temperature: Water up to 60°C; 140°F
- Benefits – higher air flow during air relief and intake, effective automatic air release, low pressure sealing



COMBINATION AIR VALVE Model C15, C35

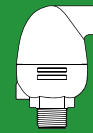
- Body – Glass-reinforced Nylon
- Inlet sizes: DN50; 2"
- Connections: Threaded male BSPT / NPT
- Outlet – Sideways, DN40; 1½" female threaded
- Pressure rating – ISO PN10/16, ANSI 150
- Operating pressure range: 0.1 – 10/16 bar, 1.5 – 150 psi
- Operating temperature: Water up to 60°C; 140°F
- Benefits – Field proven designed for use in irrigation applications with water quality such as river water, channel water, dam water or treated effluent with high reliability



Metal Combination Air Valves – C70, C75

- Body Material and coating – cast ductile Iron, coated with baked Polyester Green
- Inlet sizes: DN50 - DN300; 2" – 12"
- Connections – Threaded Female (DN50; 2"), Flanged
- Pressure rating – ISO PN16/25-40, ANSI 150/300
- Outlets – Ductile Iron (Sideways, downwards, mushroom configuration) and PE (mushroom configuration)
- Benefits – Higher air flow during air relief and intake, effective automatic air release, low pressure sealing, minimal spray effect during air release, built-in surge protection (anti-slam feature), easy installation





IR	2"	C10	SP	P	S	BP	EV	T																																																																																											
<table border="1"> <thead> <tr> <th>Sector</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>Irrigation</td> <td>IR</td> </tr> </tbody> </table>	Sector	Code	Irrigation	IR	<table border="1"> <thead> <tr> <th>Size</th> <th></th> </tr> </thead> <tbody> <tr> <td>½"</td> <td>DN12</td> </tr> <tr> <td>¾"</td> <td>DN20</td> </tr> <tr> <td>1"</td> <td>DN25</td> </tr> <tr> <td>2"</td> <td>DN50</td> </tr> <tr> <td>3"</td> <td>DN80</td> </tr> <tr> <td>4"</td> <td>DN100</td> </tr> <tr> <td>6"</td> <td>DN150</td> </tr> <tr> <td>8"</td> <td>DN200</td> </tr> <tr> <td>10"</td> <td>DN250</td> </tr> <tr> <td>12"</td> <td>DN300</td> </tr> </tbody> </table>	Size		½"	DN12	¾"	DN20	1"	DN25	2"	DN50	3"	DN80	4"	DN100	6"	DN150	8"	DN200	10"	DN250	12"	DN300	<table border="1"> <thead> <tr> <th>Body Material</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>Plastic</td> <td>P</td> </tr> <tr> <td>Ductile Iron</td> <td>C</td> </tr> <tr> <td>Stainless Steel</td> <td>N</td> </tr> <tr> <td>Ductile Iron & Composite</td> <td>J</td> </tr> <tr> <td>Stainless Steel & Composite</td> <td>G</td> </tr> </tbody> </table>	Body Material	Code	Plastic	P	Ductile Iron	C	Stainless Steel	N	Ductile Iron & Composite	J	Stainless Steel & Composite	G	<table border="1"> <thead> <tr> <th>Outlet Types</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>Side</td> <td>S</td> </tr> <tr> <td>Down (C50, C70, C75)</td> <td>D</td> </tr> <tr> <td>Mushroom (C70, C75)</td> <td>M</td> </tr> </tbody> </table>	Outlet Types	Code	Side	S	Down (C50, C70, C75)	D	Mushroom (C70, C75)	M	<table border="1"> <thead> <tr> <th>Coating (For Ductile Iron Only)</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>Epoxy UV Protected Blue</td> <td>EV</td> </tr> </tbody> </table>	Coating (For Ductile Iron Only)	Code	Epoxy UV Protected Blue	EV	<table border="1"> <thead> <tr> <th>End Connections / Pressure Ratings</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Threaded</td> <td>BSP Male (A10/A30, ¾"-1" K10, C10/C30, C15/C35, C50)</td> <td>BP</td> </tr> <tr> <td>NPT Male (A10/A30, ¾"-1" K10, C10/C30, C15/C35, C50)</td> <td>NP</td> </tr> <tr> <td>BSP Female (2" C70, 2" K10)</td> <td>BA</td> </tr> <tr> <td>NPT Female (2" C70, 2" K10)</td> <td>NA</td> </tr> <tr> <td rowspan="5">Flanged</td> <td>ISO PN10</td> <td>10</td> </tr> <tr> <td>ISO PN16</td> <td>16</td> </tr> <tr> <td>ANSI 150</td> <td>A5</td> </tr> <tr> <td>ABNT 16</td> <td>B6</td> </tr> <tr> <td>AS16</td> <td>SA</td> </tr> <tr> <td rowspan="2">Flange Adaptors</td> <td>Universal Flange (ISO 10/16, AS16) connected to BSP male (C10/C30 2-3", C50 2-3-4")</td> <td>FF</td> </tr> <tr> <td>Universal Flange (ANSI 150) connected to NPT male (C10/C30 2"-3", C50 2"-4")</td> <td>FN</td> </tr> </tbody> </table>	End Connections / Pressure Ratings	Code	Threaded	BSP Male (A10/A30, ¾"-1" K10, C10/C30, C15/C35, C50)	BP	NPT Male (A10/A30, ¾"-1" K10, C10/C30, C15/C35, C50)	NP	BSP Female (2" C70, 2" K10)	BA	NPT Female (2" C70, 2" K10)	NA	Flanged	ISO PN10	10	ISO PN16	16	ANSI 150	A5	ABNT 16	B6	AS16	SA	Flange Adaptors	Universal Flange (ISO 10/16, AS16) connected to BSP male (C10/C30 2-3", C50 2-3-4")	FF	Universal Flange (ANSI 150) connected to NPT male (C10/C30 2"-3", C50 2"-4")	FN	<table border="1"> <thead> <tr> <th>Additional Attributes</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>Stainless Steel Pressure Test Point (Schrader Valve)</td> <td>T</td> </tr> <tr> <td>Pressure Test Point</td> <td>S</td> </tr> <tr> <td>Lower Service Port ⅛" NPT (¾"-1" A10/A30, C10/C30) or ¼" NPT (2-3" C10/C30, C70, C75)</td> <td>P</td> </tr> <tr> <td>¾" Female threaded Outlet (¾"-1" A10/A30 C10/C30)</td> <td>t</td> </tr> <tr> <td>Insect Screen (C70, C75)</td> <td>S</td> </tr> <tr> <td>Drainage Valve (C10, C30, C50, C70, C75)</td> <td>Z</td> </tr> <tr> <td>Stainless Steel lower float (C50)</td> <td>N</td> </tr> </tbody> </table>	Additional Attributes	Code	Stainless Steel Pressure Test Point (Schrader Valve)	T	Pressure Test Point	S	Lower Service Port ⅛" NPT (¾"-1" A10/A30, C10/C30) or ¼" NPT (2-3" C10/C30, C70, C75)	P	¾" Female threaded Outlet (¾"-1" A10/A30 C10/C30)	t	Insect Screen (C70, C75)	S	Drainage Valve (C10, C30, C50, C70, C75)	Z	Stainless Steel lower float (C50)	N
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Side	S																																																																																																		
Down (C50, C70, C75)	D																																																																																																		
Mushroom (C70, C75)	M																																																																																																		
Coating (For Ductile Iron Only)	Code																																																																																																		
Epoxy UV Protected Blue	EV																																																																																																		
End Connections / Pressure Ratings	Code																																																																																																		
Threaded	BSP Male (A10/A30, ¾"-1" K10, C10/C30, C15/C35, C50)	BP																																																																																																	
	NPT Male (A10/A30, ¾"-1" K10, C10/C30, C15/C35, C50)	NP																																																																																																	
	BSP Female (2" C70, 2" K10)	BA																																																																																																	
	NPT Female (2" C70, 2" K10)	NA																																																																																																	
Flanged	ISO PN10	10																																																																																																	
	ISO PN16	16																																																																																																	
	ANSI 150	A5																																																																																																	
	ABNT 16	B6																																																																																																	
	AS16	SA																																																																																																	
Flange Adaptors	Universal Flange (ISO 10/16, AS16) connected to BSP male (C10/C30 2-3", C50 2-3-4")	FF																																																																																																	
	Universal Flange (ANSI 150) connected to NPT male (C10/C30 2"-3", C50 2"-4")	FN																																																																																																	
Additional Attributes	Code																																																																																																		
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Pressure Test Point	S																																																																																																		
Lower Service Port ⅛" NPT (¾"-1" A10/A30, C10/C30) or ¼" NPT (2-3" C10/C30, C70, C75)	P																																																																																																		
¾" Female threaded Outlet (¾"-1" A10/A30 C10/C30)	t																																																																																																		
Insect Screen (C70, C75)	S																																																																																																		
Drainage Valve (C10, C30, C50, C70, C75)	Z																																																																																																		
Stainless Steel lower float (C50)	N																																																																																																		
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Combination Air Valve

Glass Reinforced Nylon, PN10 / 150 PSI

C10

Size	Connection
¾"	DN20 Threaded
1"	DN25 Threaded
2"	DN50 Threaded Flanged
3"	DN80 Flanged



Combination Air Valve

Glass Reinforced Nylon, PN10 / 150 PSI

C15

Size	Connection
2"	DN50 Threaded



Kinetic Air Valve

Glass Reinforced Nylon, PN10 / 150 PSI

K10

Size	Connection
¾"	DN20 Threaded
1"	DN25 Threaded
2"	DN50 Threaded



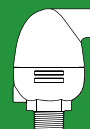
Automatic Air Valve

Glass Reinforced Nylon, PN10 / 150 PSI

A10

Size	Connection
¾"	DN20 Threaded
1"	DN25 Threaded





Combination Air Valve

PN16 (0.1 - 16 bar)

IR-C30-P

Size		Connection
3/4"	DN20	Threaded
1"	DN25	Threaded
2"	DN50	Threaded
		Flanged
3"	DN80	Flanged



Combination Air Valve

PN16 (0.1 - 16 bar)

IR-C35-P

Size		Connection
2"	DN50	Threaded



Combination Air Valve

PN16 (0.1 - 16 bar)

IR-C30-C

Size		Connection
1"	DN25	Threaded
2"	DN50	Threaded
		Flanged

Additional feature of Surge Protection included in 2"; DN50



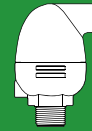
Automatic Air Valve

PN16 (0.1 - 16 bar)

IR-A30-P

Size		Connection
3/4"	DN20	Threaded
1"	DN25	Threaded





Vacuum Breaker

Acetal (POM), PN10 / 150 PSI

ARV

Size	Connection
1/2"	DN12 Threaded



Combination Air Valve

Ductile Iron Body and Cover, PN16

IR-C70-C

Size	Connection
2"	DN50 Threaded Flanged
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged
10"	DN250 Flanged



Combination Air Valve

Ductile Iron Body and Cover, PN16

IR-C75-C

Size	Connection
3"	DN80 Flanged
4"	DN100 Flanged
6"	DN150 Flanged
8"	DN200 Flanged
10"	DN250 Flanged
12"	DN300 Flanged



Combination Air Valve for Sewage & Wastewater

with Surge Protection, PN10 (0.1 - 10 bar)

IR-C50-P

Size	Connection
2"	DN50 Threaded Flanged
3"	DN80 Threaded Flanged
4"	DN100 Flanged





Combination Air Valve for Sewage & Wastewater

Ductile Iron Body and Cover with Surge Protection,

PN16 (operating pressure 0.1 - 10 bar).

Size		Connection
2"	DN50	Threaded
		Flanged
3"	DN80	Flanged
4"	DN100	Flanged

Note: Hydraulic Properties according to SP Feature

IR-C50-C



Combination Air Valve for Sewage & Wastewater

Ductile Iron Body and Composite Cover with Surge Protection,

PN16 (operating pressure 0.1 - 10 bar).

Size		Connection
2"	DN50	Threaded
		Flanged
3"	DN80	Flanged
4"	DN100	Flanged

Note: Hydraulic Properties according to SP Feature

IR-C50-J



Combination Air Valve for Sewage & Wastewater

Stainless Steel Body and Composite Cover with Surge Protect,

PN16 (operating pressure 0.1 - 10 bar)

Size		Connection
2"	DN50	Threaded
		Flanged
3"	DN80	Threaded
		Flanged

Note: Hydraulic Properties according to SP Feature

IR-C50-G



Combination Air Valve for Sewage & Wastewater

Stainless Steel Body and Cover with Surge Protection,

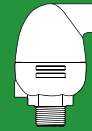
PN16 (operating pressure 0.1 - 10 bar)

Size		Connection
2"	DN50	Threaded
		Flanged
3"	DN80	Threaded
		Flanged

Note: Hydraulic Properties according to SP Feature

IR-C50-N





Additional Features to selected air valves models

Code	Description	Size Range
8820C80350	Surge Protection device connected to the valve outlet for C10, C30, C50	2"-4" \ DN50-100
SP	Surge Protection device for C70 (for C75 use price of one size lower)	2" \ DN50
		3" \ DN80
		4" \ DN100
		6" \ DN150
		8" \ DN200
		10"-12" \ DN250-300
8620C30031	Assited Closing device connected to the valve outlet for C10, C30, C50	2"-3" \ DN50-80
AC	Assited Closing kit for C70, compatible with Down, Side and PE Mushroom outlets (for C75 use price of one size lower)	2" \ DN50
		3" \ DN80
		4" \ DN100
		6" \ DN150
8620C80250	Inflow Prevention device connected to the valve outlet for C10, C30-P, C50	8" \ DN200
		2"-4" \ DN50-100

Accessories to selected air valves models

Code	Description	Size Range
Z	1" Plastic Drainage Valve for C50-P	2"-4" \ DN50-100
	1" Stainless Steel Drainage Valve for C50-C/J/G/N	
	¼" Drainage Valve for C70, C75	
FF, FN	ISO16 / ANSI150 Composite Flange, connected to male thread for C10, C30	2" \ DN50
	ISO16 / ANSI150 Composite Flange, connected to male thread for C50	3" \ DN80
		2" \ DN50
		3" \ DN80
S	Stainless Steel Insect Screen for C70 (for C75 use price of one size lower)	4" \ DN100
		6" \ DN150
		8" \ DN200
		2" \ DN50
P	Drilled Service Port, ⅛" for ¾"-1" (DN20, DN25) inlet with Plastic Plug for A10/30, C10/15/30/35	¾"-1" \ DN20-25
	Drilled Service Port, ¼" for 2"-3" (DN50, DN80) inlet with Plastic Plug for A10/30, C10/15/30/35	2"-3" \ DN50-80
	Drilled Lower Service Port, ¼" NPT with Stainless Steel plug for C70, C75	2"-8" \ DN50-200
U	Drilled Upper Service Port, ½" NPT with Stainless Steel plug for C70, C75	2"-8" \ DN50-200
T	Stainless Steel Pressure Test point (Schrader Valve) for A10/30, C10/15/30/35	¾"-2" \ DN20-50
t	¾" (DN20) Female threaded outlet for A10/30, C10/30	¾" \ DN20
---	90 degree elbow outlet for A10, A30, C10 outlet - pack of 50 units	¾" \ DN20
	Extension and 90 degree elbow threaded to 2" outlet for C10, C30	2"-3" \ DN50-80
	PVC hex nipple + 90 degree elbow (BSP) for 2"-C70, 3"-C75 side outlet only	
	PVC hex nipple + 90 degree elbow (BSP) for 3"-C70, 4"-C75 side outlet only and 3"-4" C80	3"-4" \ DN80-100



Packing Specifications

K10



3/4" - 1"	
No. of Layers	2
No. of Units	24
Length [cm]	31.0
Width [cm]	23.0
Height [cm]	24.5
Gross Weight	4.82
Volume [m³]	0.02

**C10
C30**



3/4" - 1"	
No. of Layers	1
No. of Units	12
Length [cm]	37.0
Width [cm]	27.2
Height [cm]	17.5
Gross Weight	5.84
Volume [m³]	0.03

**A10
A30**



3/4" - 1"	
No. of Layers	1
No. of Units	12
Length [cm]	37.0
Width [cm]	27.2
Height [cm]	17.5
Gross Weight	4.88
Volume [m³]	0.03

K10



2"	
No. of Layers	1
No. of Units	12
Length [cm]	37.0
Width [cm]	27.2
Height [cm]	17.5
Gross Weight	3.92
Volume [m³]	0.03

**C15
C35**



2"	
No. of Layers	1
No. of Units	9
Length [cm]	31.7
Width [cm]	27.5
Height [cm]	19.1
Gross Weight [kg]	0.61
Volume [m³]	0.02

**C10
C30**



2"	
No. of Layers	1
No. of Units	6
Length [cm]	40.5
Width [cm]	25.5
Height [cm]	28.2
Gross Weight	8.47
Volume [m³]	0.03

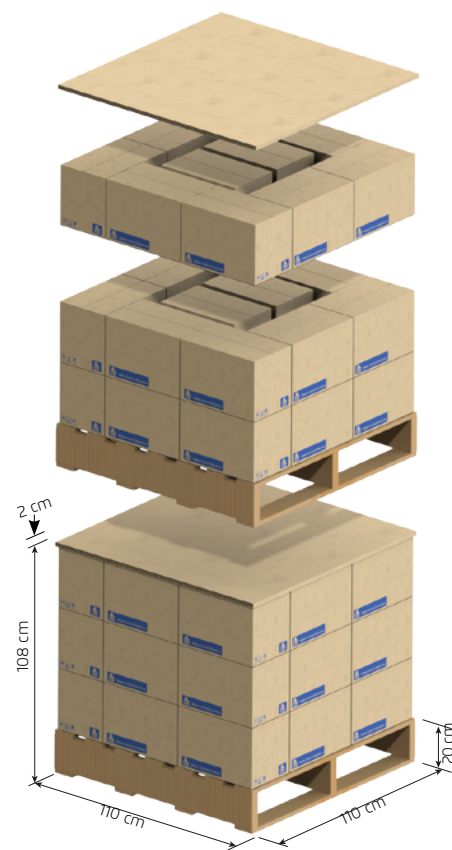
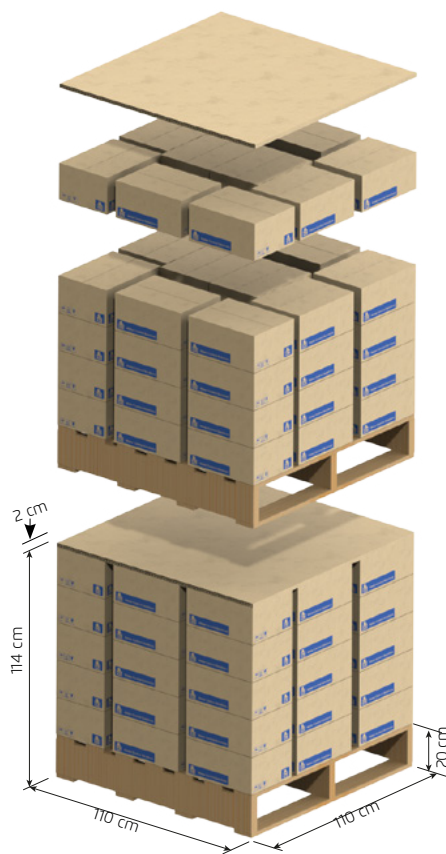
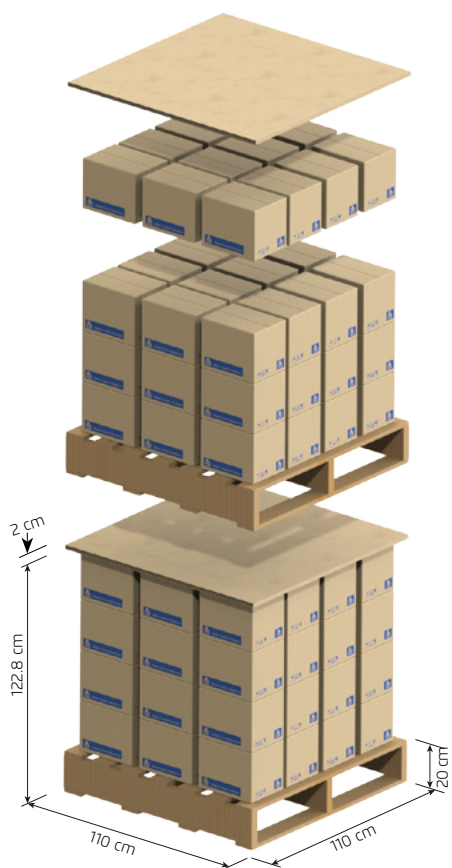


Packing Specifications

K10 - ¾", 1"

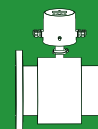
A10, A30, C10, C30 - ¾", 1"
K10 - 2"

C10 - 2"
C30 - 2"



Per Pallet

Valve Size	Pallet							
	Number of Boxes	Number of Levels	Number of Units	Length [cm]	Width [cm]	Height [cm]	Gross weight [kg]	Volume [m³]
¾", 1" K10	48	4	1,152	110	110	122.8	251	1.49
¾", 1" C10 / C30	50	5	600	110	110	114	312	1.38
¾", 1" A10 / A30	50	5	600	110	110	114	264	1.38
2" K10	50	5	600	110	110	114	216	1.38
2" C10 / C30	30	3	180	110	110	108	274	1.31
2" C15 / C35	40	5	360	110	110	125	250	1.52



Electromagnetic Flow Meters

Models: MUT2200EL, MUT2300, M10 & MUT1222

The BERMAD Electromagnetic Flow Meter is a robust state of the art flow meter for various irrigation applications. This flow meter technology provide superior accuracy & reliability at all flow ranges.

BERMAD Electromagnetic Flow Meters available in diameter range of ½" - 104".



Features and Benefits

- **High Accuracy at wide flow range –**
Each sensor is calibrated on a hydraulic bench equipped with a reference weighting system
- **Open flow path –**
Allows for use upstream of filtration, in canals and effluent Water
- **DC compact electronics –**
Low power consumption ideal for use in locations without power supply
- **Rugged and Efficient Construction –**
Accurate measurement of corrosive fluids, manure and wastewater
- **Combined Sensors –**
Flow and pressure transducer Combined in one unit for optimizing monitoring capabilities
- **Data logging -**
100,000 lines of data with a frequency of log between 1 minute and 120 minutes (default 15 minutes)

Typical Applications

- Compliant with water usage reporting regulation
- Remote or local monitoring of flows and water usage
- Leak and plugging detection in irrigation systems
- Accumulations of filtration flush water

Technical Specifications

- **Flow tube material:** **AISI 304**, AISI 316
- **Flange material:** **Coated Carbon steel**, AISI 304, AISI 316
- **Electrodes material:** **Hastelloy C**, AIS
- **Internal lining:**
 - PTFE Standard
 - Ebonite (Hard Rubber)
 - Liquid temperature: 80°C
- **Available Sizes:**
 - **MUT2200:** ½"-80"
 - **MUT2300:** 2"-12"
 - **M10:** 2"-6"
 - **MUT1222:** 2"-104"
- **Flange Standard:** EN1092-1, ANSI 150, ANSI 300, ANSI 600, DIN 2501, BS 4504, AS 2129 (TABLE D - E - F), AS 4087, ISO 7005-1, KS 10K
- **Isolation Rating:**
 - **MUT2200:** IP68 1.5 m continuous immersion (EN 60529)
 - **MUT2300:** IP68 1.5 m continuous immersion (EN 60529)
 - **M10:** IP68 1.5 m continuous immersion (EN 60529)
 - **MUT1222:** IP68 1.5 m continuous immersion (EN 60529)
- **Compatible Converters:** MC406/A, MC608 A/B/P
- **Electrical Connections:** Cable glands M20 x 1.5, terminal blocks and sealing resin
- **Calibration:** ISO 11631 Group B1
 - Measurement error 0.2% +/- 2 mm/s When installed as described below.
 - Repeatability 0.1%

Converter MC406

The MC406 is a high-efficiency, technologically advanced battery powered electronic converter BERMAD, combining high performances and dedicated applications solutions to a low cost of ownership. Up to 10 years of battery life allows maintenance free of operation. Battery pack is then easily replaceable, all data are automatically stored in the internal EEPROM memory and no data will be lost.



Converter MC608

The MC608 converter has been designed with the purpose of meeting all the requirements of modern water management systems through a flexible and hybrid electronic, mains powered, battery powered, or both.



Remote Installation (optional)

Separate (Remote) installation is optional, extension cable with variable length supplied from factory

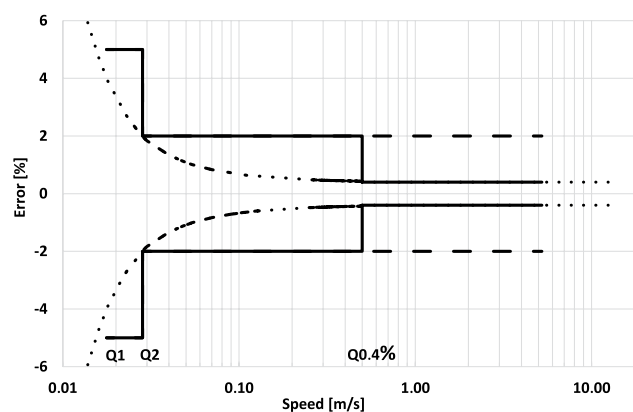


Remote data reading

With advanced display information, on-site data collection and remote monitoring, the MC406 and MC608 allow any customer to access all the information, easily and at no cost. Add on modules of temperature and pressure readying, make the MC406 one of the most complete electronic converter for electromagnetic flowmeters available, giving to the end user a full control over all the main parameters of its network, reducing cost of programming, installation and maintenance. One unit supplying flow - pressure - temperature, all at the same time.

FLOW RATES - MUT2300

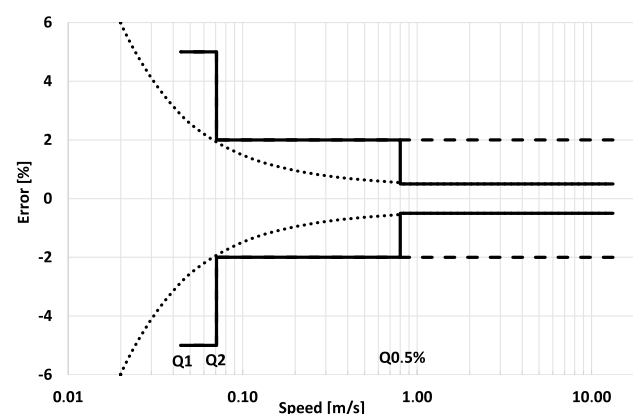
Sensor diameter	Flow [m³/h]					Ratio Q3/Q1
	Min Q1	Trans. Q2	Q0.4%	Perm. Q3	Overl. Q4	
DN50 - 2"	0.125	0.20	3.50	25.00	31.25	200
DN80 - 3"	0.315	0.50	9.00	63.00	78.75	200
DN100 - 4"	0.50	0.80	14.00	100.00	125.00	200
DN150 - 6"	1.25	2.00	32.00	250.00	312.50	200
DN200 - 8"	3.15	5.04	57.00	630.00	787.50	200
DN250 - 10"	5.00	8.00	90.00	1000.00	1250.00	200
DN300 - 12"	8.00	12.50	128.00	1000.00	1250.00	125



* Permissible Error @ Q3 = 0.2% +/- 2mm/s

FLOW RATES - MUT2200EL

Sensor diameter	Flow rate [m³/h]					Ratio Q3/ Q1
	DN					
	Min. Q1	Trans. Q2	Q0.5%	Perm. Q3	Overl. Q4	
DN 80 - 2"	0.200	0.320	5.65	25.00	31.25	125
DN 80 - 3"	0.504	0.806	14.50	63.00	78.75	125
DN 100 - 4"	0.800	1.280	22.60	100.00	125.00	125
DN 150 - 6"	2.000	3.200	51.00	250.00	312.50	125
DN 200 - 8"	3.200	5.120	90.50	400.00	500.00	125
DN 250 - 10"	5.040	8.064	140.00	630.00	787.50	125
DN 300 - 12"	8.000	12.800	200.00	1000.00	1250.00	125
DN 350 - 14"	12.800	20.480	280.00	1600.00	2000.00	125
DN 400 - 16"	12.800	20.480	360.00	1600.00	2000.00	125

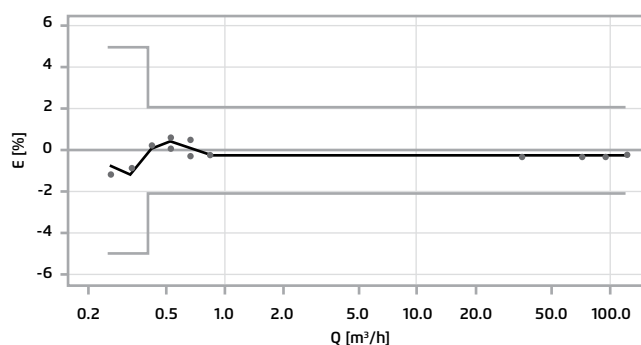


* Permissible Error @ Q3 = 0.2% +/- 2mm/s

FLOW RATES - M10

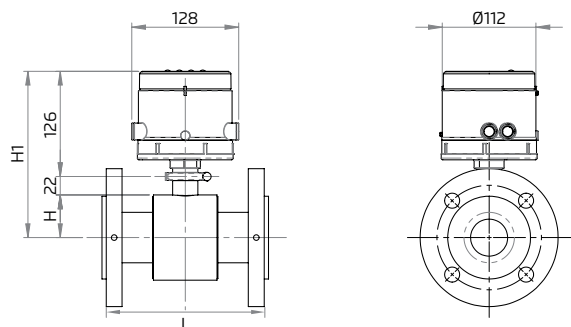
Sensor diameter	Ø In and Outlet (mm)	Flow [m³/h]				Ratio Q3/Q1
		Min Q1	Trans. Q2	Perm. Q3	Overl. Q4	
DN50 - 2"	50	0.10	0.16	40	50	400
DN80 - 3"	80	0.25	0.40	100	125	400
DN100 - 4"	100	0.40	0.64	160	200	400
DN150 - 6"	150	1.00	1.60	400	500	400

Maximum Permissible Error is within the limits indicated in the following graph:



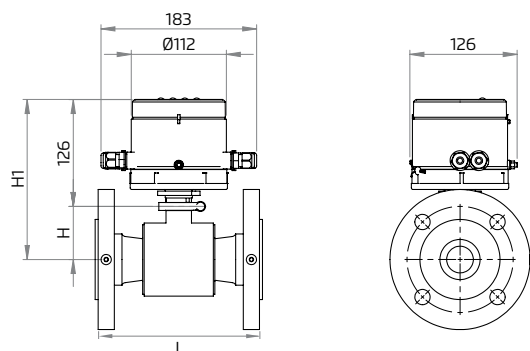
MC406 Dimensions

MUT2200EL - MC406 VERTICAL



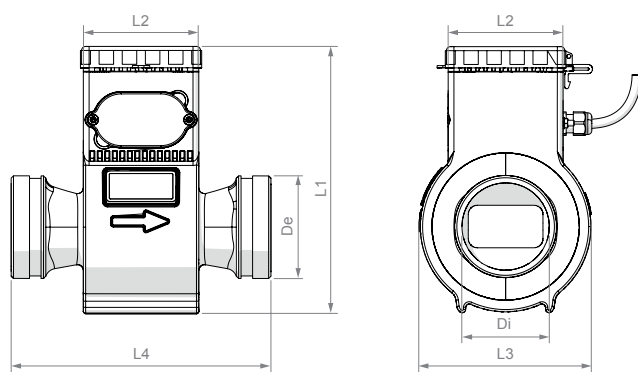
Size	H (mm)	H1 (mm)	L (mm)
1½"; DN40	44	192	200
2"; DN50	51	199	200
3"; DN80	64	212	200
4"; DN100	81	229	250
6"; DN150	105	253	300
8"; DN200	131	279	350
10"; DN250	160	308	400
12"; DN300	186	334	450
14"; DN350	202	350	500
16"; DN400	228	376	550

MUT2300 - MC406 VERTICAL



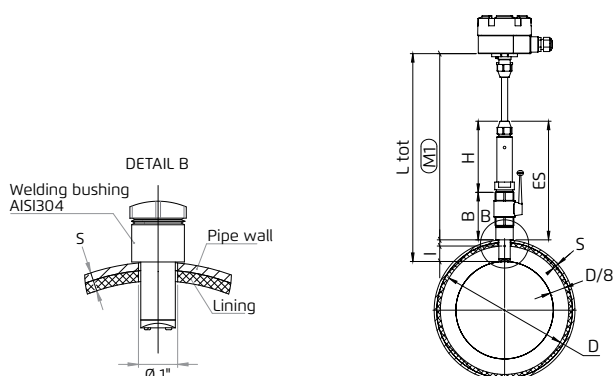
Size	H (mm)	H1 (mm)	L (mm)
2"; DN50	62	188	200
3"; DN80	71	197	200
4"; DN100	79	205	250
6"; DN150	101	227	300
8"; DN200	147	273	350
10"; DN250	176	302	450
12"; DN300	207	333	500

M10



Size	De	L1	L2	L3	L4
2"; DN50	60.3	230	100	150	200
3"; DN80	88.6	230	100	150	225
4"; DN100	114.3	230	100	150	250
6"; DN150	168.3	300	100	210	300

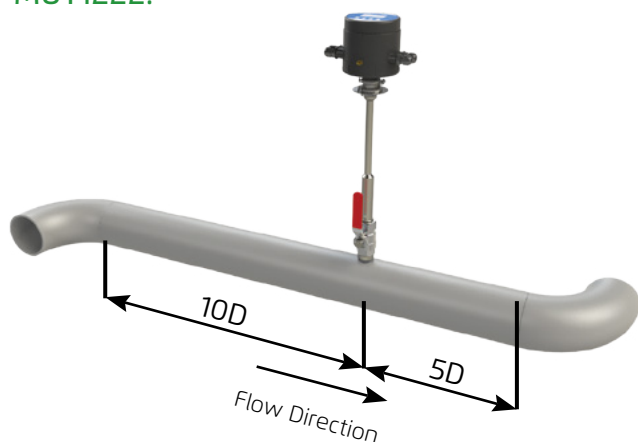
MUT1222 - MC406 VERTICAL



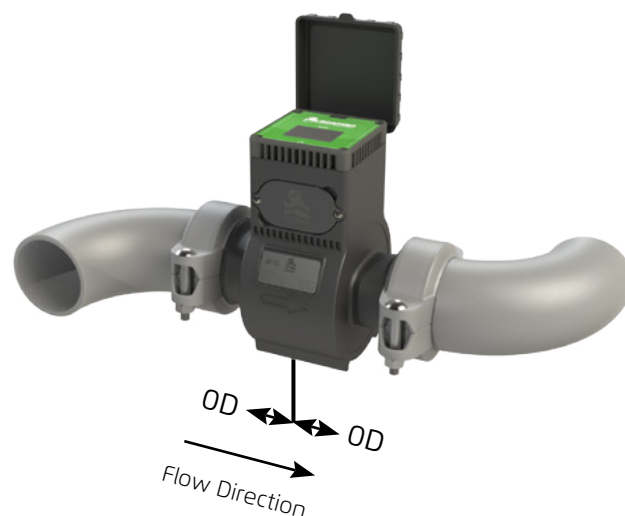
Size	L total	ES
Small	403	230
Medium	674	367
Large	916	499

Required Upstream and Downstream Pipe Lengths

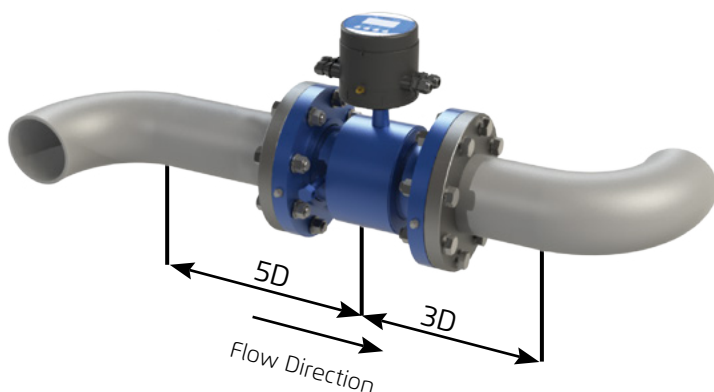
MUT1222:



M10:

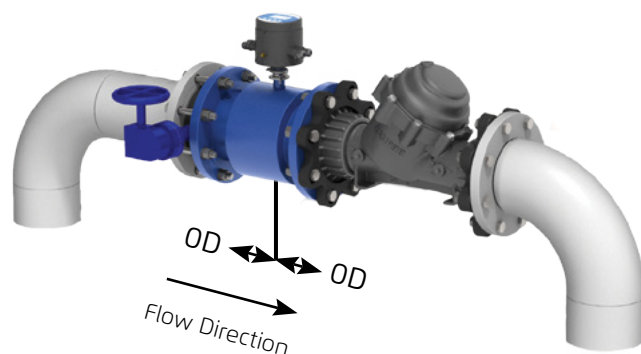


MUT2200EL:

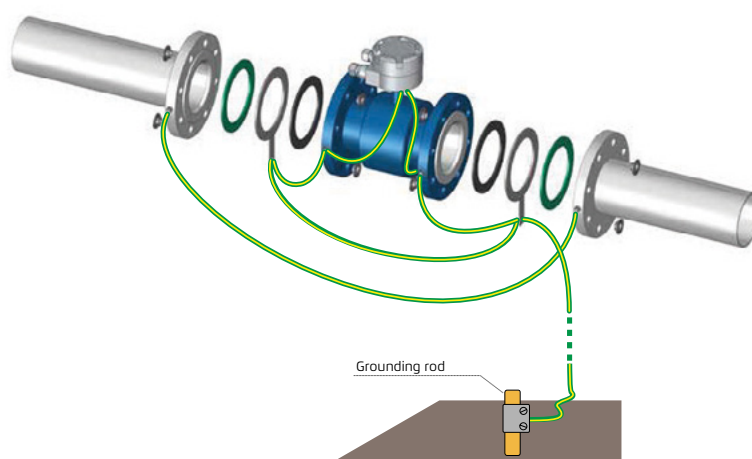


MUT2300:

No Upstream and Downstream Required Distances



Grounding:







Light Weight Composite Electromagnetic flow meter

Split Flanged, Bluetooth & Modbus communication, & Dual Pulse outputs

M10-FF

Replaceable lithium battery pack (can accept 12Vdc external)

Size	Connection	Installation
2"	DN50	Metal Flanges
		Compact

Size	Connection	Installation
3"	DN80	Metal Flanges
		Compact
4"	DN100	Metal Flanges
		Compact

Zero D is needed for installation
Metal split flanges are supplied with the meter

New



Light Weight Composite Electromagnetic flow meter

Groove ends, Bluetooth & Modbus communication, & Dual Pulse outputs

M10-VI

Replaceable lithium battery pack (can accept 12Vdc external)

Size	Connection	Installation
2"	DN50	Grooved-US
		Compact

Size	Connection	Installation
3"	DN80	Grooved-US
		Compact
4"	DN100	Grooved-US
		Compact

Zero D is needed for installation
Metal split flanges are available

New



DC Powered Wafer Electromagnetic Flow Meter

Model MUT1000+M406

MUT1000-MC406

Dual pulse outputs

Size	Connection	Installation
2"	DN50	Wafer
		Compact
3"	DN80	Wafer
		Compact
4"	DN100	Wafer
		Compact
6"	DN150	Wafer
		Compact

Size	Connection	Installation
8"	DN200	Wafer
		Compact
10"	DN250	Wafer
		Compact
12"	DN300	Wafer
		Compact

Also available with external power 12-24 VAC
5U-3D Installation requirements
Add-ons: GSM, Modbus, BLE, 4-20mA, pressure & temp. sensors



DC Powered Insertion Electromagnetic Flow Meter

Model MUT1222+MC406

MUT1222-MC406

Dual pulse outputs

Size Range	Installation
2"-24" \ DN50-600	Compact
8"-60" \ DN200-1500	Compact

Size Range	Installation
18"-104" \ DN450-2600	Compact

1" Ball valve zinc plated brass
15U-10D Installation requirements
Also available with external power 12-24 VAC
Add-ons: GSM, Modbus, BLE, 4-20mA, pressure & temp. sensors





DC Powered Electromagnetic Flow Meter

Model MUT2200-MC406

MUT2200-MC406

Dual Pulse

Size	Connection	Installation
2"	DN50	Flanged
3"	DN80	Flanged
4"	DN100	Flanged
6"	DN150	Flanged
8"	DN200	Flanged

Size	Connection	Installation
10"	DN250	Flanged
12"	DN300	Flanged
14"	DN350	Flanged
16"	DN400	Flanged

Flanges are available in various standards

5U-3D Installation requirements

Also available with external power 12-24 VAC

Add-ons: GSM, Modbus, BLE, 4-20mA, pressure & temp. sensors



DC Powered, Zero D, Electromagnetic Flow Meter

Model MUT2300-MC406

MUT2300-MC406

Dual Pulse

Size	Connection	Installation
2"	DN50	Flanged
3"	DN80	Flanged
4"	DN100	Flanged

Size	Connection	Installation
6"	DN150	Flanged
8"	DN200	Flanged
10"	DN250	Flanged
12"	DN300	Flanged

Flanges are available in various standards

Zero D is required for installation before and after the meter

Also available with external power 12-24 VAC

Add-ons: GSM, Modbus, BLE, 4-20mA, pressure & temp. sensors



Grounding Rings Kit

Code	Description	Size Range
EM-KT-DS0050X	KIT 2 GROUNDING RING 2" / DN50 UP TO PN40/ANSI300 AISI304	2" \ DN50
EM-KT-DS0080X	KIT 2 GROUNDING RING 3" / DN80 UP TO PN40/ANSI300 AISI304	3" \ DN80
EM-KT-DS0100X	KIT 2 GROUNDING RING 4" / DN100 UP TO PN40/ANSI300 AISI304	4" \ DN100
EM-KT-DS0150X	KIT 2 GROUNDING RING 6" / DN150 UP TO PN40/ANSI300 AISI304	6" \ DN150
EM-KT-DS0200X	KIT 2 GROUNDING RING 8" / DN200 UP TO PN40/ANSI300 AISI304	8" \ DN200
EM-KT-DS0250X	KIT 2 GROUNDING RING 10" / DN250 UP TO PN40/ANSI300 AISI304	10" \ DN250
EM-KT-DS0300X	KIT 2 GROUNDING RING 12" / DN300 UP TO PN40/ANSI300 AISI304	12" \ DN300
EM-KT-DS0350X	KIT 2 GROUNDING RING 14" / DN350 UP TO PN40/ANSI300 AISI304	14" \ DN350
EM-KT-DS0400X	KIT 2 GROUNDING RING 14" / DN400 UP TO PN40/ANSI300 AISI304	16" \ DN400

Recommended to install in every installation to avoid electrical interruptions in measurement. Available in all sizes.



Electromagnetic flow meters additional accessories and features

	Code	Description
	MC406-Bat	Battery to suit MC406 EM-PB900013
	MC608-Bat	Battery to suit MC608B EM-PB900002
	EM-PB900011	MUT7000 lithium battery pack
	IR-COM	Infra Red communication cable
		2" grooved split flange KIT - one side
		3" grooved split flange KIT - one side
		4" grooved split flange KIT - one side
	EM-CA7K0510	10 meter Pulse, RS485, and power supply cable
	EM-CA7K0505	5 meter Pulse, RS485, and power supply cable
	EM-CA7K0501	2 meter Pulse, RS485, and power supply cable







TURBO-BAR-ME

Woltman Water Meter with Electronic Register

Heavy duty and designed to handle high flow rates, the Turbo-Bar WPH-Magnetic Drive water meter covers a very wide flow range, and is particularly suited to industrial, waterworks, water distribution, water monitoring, and agricultural applications. Based on the Woltmann principle, the helical blades of the turbine rotate around the axis of flow. Turbo-Bar products are long-life, and easy to maintain at low cost.

Features and Benefits

- Digital display (LCD, 4-8 digits) of Flow Rate and Volume
- Electronically improves metering sensitivity
- Reduces reverse flow from accumulated volume
- Programmable Measuring units and Pulse rate
- Battery lifespan – 8 years
- Integrated fast pulse output
- Can easily upgrade any Standard meter
- Dry, IP68; NEMA 6P Sealed Register

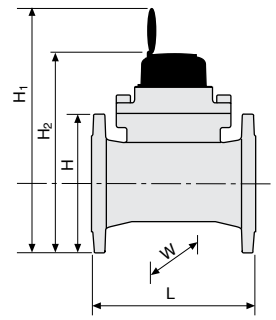
Typical Applications

- Computerized Irrigation Systems
 - Irrigation Control Head
 - In-Field Control Head
- Remote Flow Data Read-Out
 - Flow Monitoring & Leakage Control
 - Water Treatment Systems
 - Volumetric Irrigation Systems



Dimensions and Weights

Nominal Size	mm	40	50	65	80	100	125	150	200	250	300	400	500
	Inch	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	16"	20"
L, length (mm)		260	200	200	225	250	250	300	350	450	500	500	500
H, height (mm)		170.5	180.5	190.5	200.5	215	245	277.5	335	398	452	647	784.5
H1, height (mm)		408	347.3	357.3	367.3	377.3	392.3	436.6	466.6	584.5	611.5	731.5	846.5
H2, height (mm)		336	275.3	285.3	295.3	305.3	320.3	364.6	394.6	512.5	539.5	659.5	774.5
W, flange type (mm)		160	170	190	200	230	250	285	340	395	445	600	700
Weight (kg)		13	12	14	16	19	20	39	52	105	120	187	256

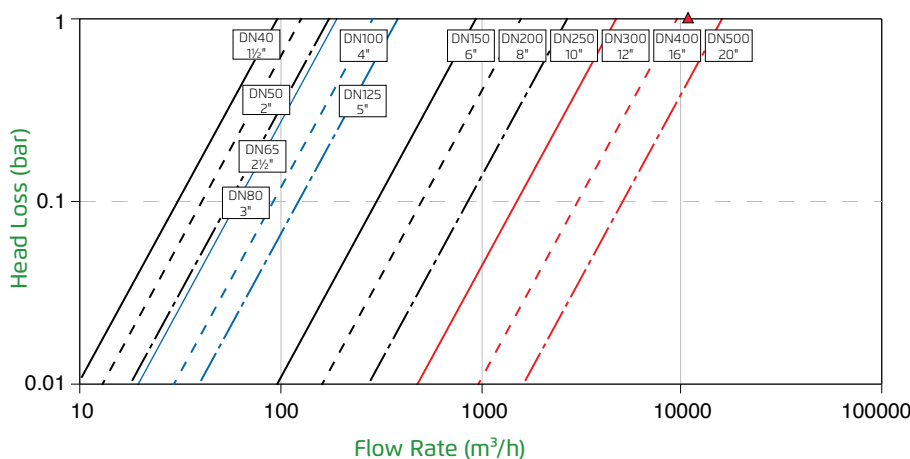


* images are for illustration purpose only

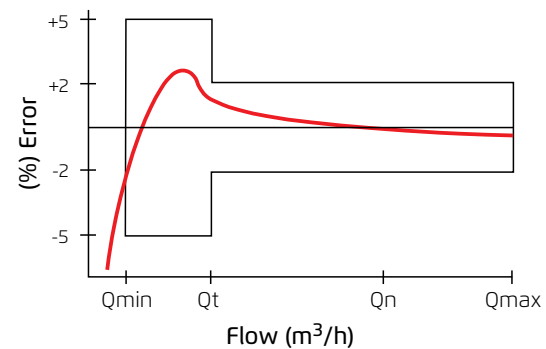
Metrological Data

	Accuracy	mm	40	50	65	80	100	125	150	200	250	300	400	500
		Inch	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	16"	20"
Qmin (Minimum flow), m³/h	±5%		0.5	0.5	0.8	1.3	1.3	2	3.1	5	8	12.5	32	50
Qt (Transitional flow), m³/h	±2%		0.8	0.8	1.3	2	2	3.2	5.0	8.0	12.6	20	51	80
Qn (Permanent flow), m³/h	±2%		25	40	63	63	100	160	250	400	630	1000	1600	2500
Qmax (Peak flow,short time), m³/h	±2%		31	50	79	79	125	200	313	500	788	1250	2000	3125
Q2/Q1			1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Q3/Q1			50	80	80	50	50	80	80	80	80	80	50	50
Kv=Q/√Δp			95	125	170	190	280	380	950	1580	2688	4700	9500	15000
Max. reading, m³			999,999						9,999,999		99,999,999			
Min. reading, liter			1						10		100			
Pressure loss Δp, bar			according to chart											

Flow Curve



Accuracy Curve



Main Operating Characteristics

- Pressure Rating: ISO PN16: 16bar; ANSI Class 150: 250psi
- Temperature: Water up to 50°C / 122°F





4"	B	ME	16	PB	M	S3
Size	Series	Code	Coating	Code	Pulse Rate	
1½"	Turbo-BAR WPH	B	Polyester Blue	PB	Pulse Rate m³	
2"					No Pulse	M-Register/E-Register 00Y
2½"					10 liter	M-Register/E-Register 0S4
3"					0.1 m³ (100 liter)	M-Register/E-Register 0S3
4"	DN100				1 m³	M-Register/E-Register 0S2
5"	DN125				10 m³	M-Register/E-Register 0S1
6"	DN150				100 m³	M-Register/E-Register 0S8
8"	DN200				1 + 0.1 m³	M-Register S23
10"	DN250				10 + 1 m³	M-Register S12
12"	DN300				100 + 10 m³	M-Register S81
14"	DN350				Pulse Rate Gal	
16"	DN400				No Pulse	M-Register/E-Register 00Y
20"	DN500				10 Gal	M-Register/E-Register 0S3
					100 Gal	M-Register/E-Register 0S2
					1,000 Gal	M-Register/E-Register 0S1
					10,000 Gal	M-Register/E-Register 0S8
					100 + 10 Gal	M-Register S23
					1,000 + 100 Gal	M-Register S12
					10,000 + 1,000 Gal	M-Register S81

Pulse Output Option - Electronic Register

Cubic meter Pulse Output Electronic Register							
Model	Size		Open Collector				
			1 Pulse for Each				
	In	mm	10 liter *	100 liter	1.0 m³	10 m³	100 m³
Turbo-BAR-E	1½"-6"	40-150	✓	✓	✓	✗	✗
	8"-12"	200-300	✗	✓	✓	✓	✗
	14"-20"	350-500	✗	✗	✓	✓	✓

* 10 liter pulse works fine up to 360 m³/h

Gallon Pulse Output Electronic Register							
Model	Size		Open Collector				
			1 Pulse for Each				
	In	mm	10 Gallons *	100 Gallons	1,000 Gallons	10,000 Gallons	
Turbo-BAR-E	1½"-6"	40-150	✓	✓	✓	✗	
	8"-12"	200-300	✗	✓	✓	✓	
	14"-20"	350-500	✗	✗	✓	✓	

* 10 Gallons pulse works fine up to 360 m³/h

Pulse Output Option - Magnetic Register

Turbo-Bar Magnetic Register / Metric Pulses & size Availability				
Size	Pulse per	100 Liter	1m³	10m³
1½"-5"; DN40-DN125	✓	✓	✗	✗
6"-8"; DN150-DN200	✗	✓	✓	✗
10"-20"; DN250-DN500	✗	✗	✓	✓

Turbo-Bar Magnetic Register / Metric Fast Pulses & Size Availability		
Size	Pulse per	100 Liter
1½"-3"; DN40-DN80	✓	✗
6"-8"; DN150-DN200	✗	✓

* Consult BERMAD for additional fast pulse rates





Woltman Water Meter

with Magnetic Drive & Electronic Register

Turbo-Bar-ME

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
5"	DN125 Flanged

Size	Connection
6"	DN150 Flanged
8"	DN200 Flanged
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
20"	DN500 Flanged



Woltman Water Meter

with Magnetic Drive & Magnetic Register

Turbo-Bar-M

Size	Connection
1½"	DN40 Flanged
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
5"	DN125 Flanged

Size	Connection
6"	DN150 Flanged
8"	DN200 Flanged
10"	DN250 Flanged
12"	DN300 Flanged
14"	DN350 Flanged
16"	DN400 Flanged
20"	DN500 Flanged



Additional Features & Options

Code	Description	Size Range
RP	Reed-switch Electric Pulse Transmitter For Turbo-BAR (for Magnetic Register)	1½"-20" \ DN40-500
Sx	Pulses Divider to adjust pulse rate for controllers having a slow scanning rate	1½"-20" \ DN40-500

Standard Configuration:

All Water Meters are pre-tested and ready for installation and start-up

Main Body & Cover: Ductile iron body, available to meet international flange standards

Standard Rating: max inlet 16 bar / #150



TURBO-IR-ME

Water Meter with Electronic Register

The TURBO-IR-ME uses a multi-blade plastic paddle mounted at the top of the water passage, where disturbance from solids suspended in the water is minimal, permitting accuracy of metering in water containing up to 30% solid debris.

Ideal for irrigation and wastewater applications.

Features and Benefits

- Digital display (LCD, 4-8 digits) of Flow Rate and Volume
- Electronically improves metering sensitivity
- Reduces reverse flow from accumulated volume
- Programmable Measuring units and Pulse rate
- Battery lifespan – 8 years
- Integrated fast pulse output
- Can easily upgrade any Standard meter
- Dry, IP68; NEMA 6P Sealed Register

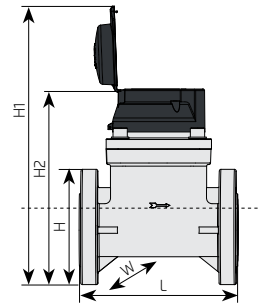
Typical Applications

- Computerized Irrigation Systems
 - Irrigation Control Head
 - In-Field Control Head
- Remote Flow Data Read-Out
 - Flow Monitoring & Leakage Control
 - Water Treatment Systems
 - Volumetric Irrigation Systems



Dimensions and Weights

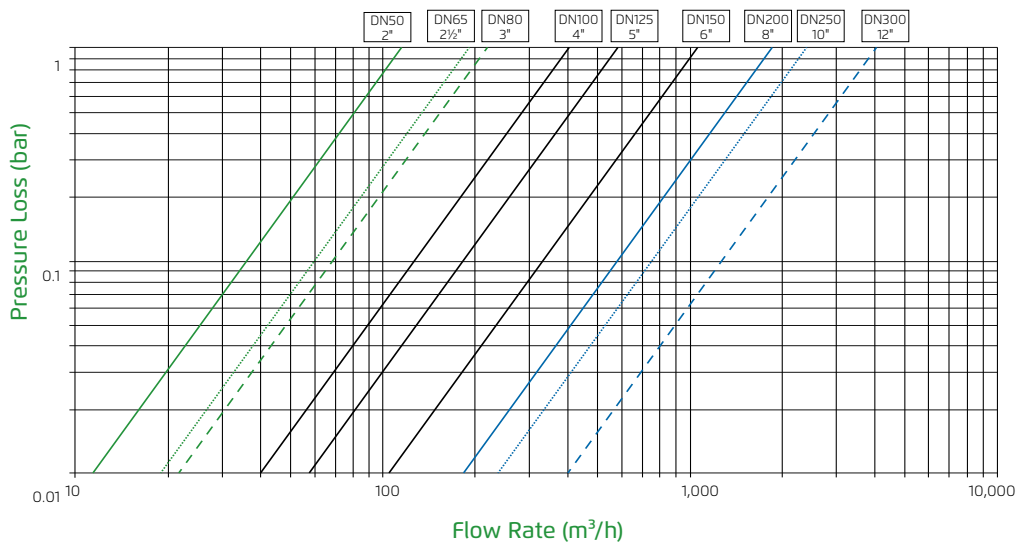
Nominal Size	mm	50	65	80	100	125	150	200	250	300
	Inch	2"	2½"	3"	4"	5"	6"	8"	10"	12"
L, Length (mm)		200	200	225	250	250	300	350	450	500
H, Height (mm)		172.5	182.5	200	215	245	314	372	450	504
H1, Height (mm)		353.5	363.5	381	391	406	434	491	544	599
H2, Height (mm)		281.5	291.5	309	319	334	362	419	472	527
W, Width (mm)		125	140	160	180	200	240	295	350	400
Weight (kg)		10.5	11.8	15.5	17.5	19.5	30.5	42.5	60	82.5



Metrological Data

	Accuracy	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300
		2"	2½"	3"	4"	5"	6"	8"	10"	12"
Qmin (Minimum flow), m³/h	±5%	2.8	4	6	10	14	20	36	48	64
Qt (Transitional flow), m³/h	±2%	10.5	15	22.5	37.5	52.5	75	135	180	240
Qn (Permanent flow), m³/h	±2%	35	50	75	125	175	250	450	600	800
Qmax (Peak flow, short time), m³/h	±2%	70	100	150	250	350	500	900	1,200	1,600
Min reading unit (m³)		0.01	0.01	0.01	0.01	0.01	0.01	0.1	1	1
Max register capacity (m³)		99,999,999 - 999,999.99 - 9,999,999.9 - 99,999,999								
Kv=Q/√Δp		115	192	219	402	584	1,059	1,826	2,373	4,017

Turbo-IR-M/ME Flow Chart



Technical data

- **Body, Cover:** Ductile Iron
- **Coating:** Polyester Green
- **End Connections - Flanged:** ISO PN16, ANSI Class 150
- **Pressure Rating:** ISO PN16: 16bar; ANSI Class 150: 250psi
- **Operating Temperature:** water up to 50°C / 122°F



4"	I	ME	16	PB	M	S3
Size	Series	Code	Coating	Code	Pulse Rate	
1½"	Turbo-IR	I	Polyester Green	PG	Pulse Rate m³	
2"					No Pulse	M-Register/E-Register 00Y
2½"					10 liter	M-Register/E-Register 0S4
3"					0.1 m³ (100 liter)	M-Register/E-Register 0S3
4"					1 m³	M-Register/E-Register 0S2
5"					10 m³	M-Register/E-Register 0S1
6"					100 m³	M-Register/E-Register 0S8
8"					1 + 0.1 m³	M-Register S23
10"					10 + 1 m³	M-Register S12
12"					100 + 10 m³	M-Register S81
					Pulse Rate Gal	
					10 Gal	M-Register/E-Register 0S3
					100 Gal	M-Register/E-Register 0S2
					1,000 Gal	M-Register/E-Register 0S1
					10,000 Gal	M-Register/E-Register 0S8

* Other End Connections are available

Pulse Output Option - Electronic Register

Cubic Meter Pulse Output Electronic transmission							
Model	Size		Open Collector 1 Pulse for Each				
			10 liter *	100 liter	1 m³	10 m³	100 m³
Turbo-IR-E	1½"-2½"	40-65	✓	✓	✓	✗	✗
	3-10"	80-250	✗	✓	✓	✓	✗
	12"	300	✗	✗	✓	✓	✓

Gallon Pulse Output Electronic transmission							
Model	Size		Open Collector 1 Pulse for Each				
			1 gal	10 gal	100 gal	1,000 gal	10,000 gal
Turbo-IR-E	1½"-2½"	40-65	✓	✓	✓	✗	✗
	3-10"	80-250	✗	✓	✓	✓	✗
	12"	300	✗	✗	✓	✓	✓

Pulse Output Option - Magnetic Register

Cubic Meter Pulse Output Magnetic transmission							
Model	Size		Dry contact Reed Switch 1 Pulse for Each				Dual pulse output
			100 liter	1.0 M³	10 m³	100 m³	
Turbo-IR-M	1½"-5"	40-125	S3	S2	-	-	S23
	6"-8"	150-200	-	S2	S1	-	S12
	10"-12"	250-300	-	-	S1	S8	S81



Paddle Wheel Water Meter

with Magnetic Drive & Magnetic register For Irrigation & Wastewater

Turbo-IR-M

Size	Connection
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged
5"	DN125 Flanged

Size	Connection
6"	DN150 Flanged
8"	DN200 Flanged
10"	DN250 Flanged
12"	DN300 Flanged



Paddle Wheel Water Meter

with Magnetic Drive & Electronic Register For Irrigation & Waste water

Turbo-IR-ME

Size	Connection
2"	DN50 Flanged
2½"	DN65 Flanged
3"	DN80 Flanged
4"	DN100 Flanged

Size	Connection
5"	DN125 Flanged
6"	DN150 Flanged
8"	DN200 Flanged
10"	DN250 Flanged
12"	DN300 Flanged



Additional Features & Options

Code	Description	Size Range
RP	Reed-switch Electric Pulse Transmitter For Turbo-BAR (for Magnetic Register)	2"-12" \ DN50-300
Sx	Pulses Divider to adjust pulse rate for controllers having a slow scanning rate	2"-12" \ DN50-300

Standard Configuration:

All Water Meters are pre-tested and ready for installation and start-up

Main Body & Cover: Ductile iron body & Cover

Standard Rating: max inlet 16 bar



OMEGA

BERMAD Cloud based irrigation control Solution

Omega is BERMAD's advanced cloud-based irrigation controller, offering anywhere-anytime connectivity to your irrigation system using **BERMAD Cloud** Web access and Smartphone App.

Omega is a standalone battery-operated controller, designed specifically to provide user-friendly and cost effective solution for irrigation systems, water distribution, data acquisition and pre-paid systems (districts & consortiums)

Features and Benefits

Omega Controller

- Cellular Connectivity
- Time based and Volumetric control
- Modular solution

BERMAD Cloud & Smartphone App

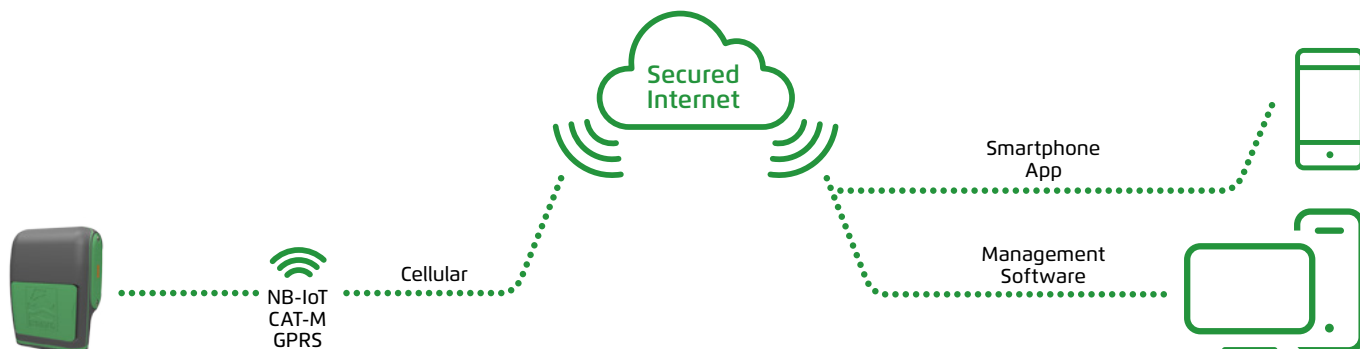
- Intuitive, functional & simple to operate
- Secured end-to-end communication.
- Real-Time alert notification
- Easy setup configuration
- Irrigation programming and manual operation

Typical Applications

- Professional Volumetric and Time Based irrigation control
- Open fields, orchards, vineyards, mesh houses, greenhouses and landscape
- Auxiliary control of remote areas, beyond reach of main farm control systems
- Water distribution, Pre-paid and Data acquisition systems for Districts & Consortiums



CONTROL AT THE PALM OF YOUR HAND



Controller Features

Volumetric and Time based Irrigation:

- 16 programs with up-to 16 sequential valve operations each
 - Weekly or Cyclic irrigation scheduling
 - 4 programmable start times or cyclic irrigation windows
 - Widespread valve run time range: 10 seconds – 2.7 years

High & Low flow monitoring with leak and clog alert for all type of operation.

I/O properties (depending on model):

- Local I/O:
 - 4, 5, 9 or 13 Latch outputs (17V DC; 100 mS pulse) with master valve / pump control assignation
 - 4 or 8 digital inputs for water meter readings and discrete sensors
 - 2 analogue inputs for 4-20mA or 0-10VDC sensors

Connectivity:

- Built in 4G Modem with 2G fallback
 - Global Data sim card for worldwide plug-and-play internet connectivity
 - Supports NB-IoT, CAT-M & GPRS communication protocols
- Bluetooth communication for technician mode tasks

Operation modes:

- Online mode: 24/7 connection between controller and cloud (require external power source)
- Offline mode:
 - Autonomous control operation, predefined cloud communication and real time alerts.
 - Designed for power saving when using internal batteries.

Power source:

- 4 LR14 (C Size) Alkaline batteries for operation in Offline mode
- 9-18VDC external power input for Online mode operation (solar panel, grid power, etc.)

Integral data logger with more than 150K records, enables comprehensive log registry that can cover long periods of offline operation



Periodic over the air firmware upgrades (FOTA)

Outdoor Installation: IP65 rated with UV protection

Standard Compliance: CE & FCC.

Industrial grade Electronic components: –35°C to 75°C

Push type connectors for quick and easy wiring without need for special tools

MODEL	LOCAL I/O			Communication			IMAGE
	Outputs	Inputs		Modbus	Cellular	Bluetooth	
	Latch	Digital	Analog				
OMEGA S	5	4	2	x	Setup & Operation	Technician Mode	
OMEGA R	4	4	2	✓			
OMEGA M	9	8	2	✓	Setup & Operation	Technician Mode	
OMEGA L	13	4	2	✓			



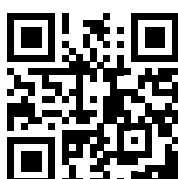
BERMAD Cloud

BERMAD Cloud offers web-based internet access to your irrigation system:

- User friendly and intuitive control features
- Global management of all your Omega controllers
- Real time status visual monitoring of your irrigation system
- Cloud level integration of third-party solutions

BERMAD Cloud Features:

- Password protected login:
 - Multi-user connectivity for enhanced management and technical support
 - Individual access level authorization
- Global Account management:
 - Language and time zone selection
 - User privileges
 - Unit support (Metric, Imperial)
- Dynamic dashboard:
 - Geo-referenced map with global view of your irrigation project
 - Current status of Omega controllers
 - Up-to-date water budget usage
 - Quick access to unit management tools
 - Unit Setup, programming and manual operation
 - Wizard for guided unit config & I/O definition
- Alert control:
 - Alert status log and email notification
 - Alert management tools:
 - Controller reaction to each type of alert
 - Alert notification settings per user
- Log information:
 - System state, operation events & alerts
 - Periodic sensor data acquisition
 - Watermeter accumulations
 - Analog sensor data
 - Battery charge
- Report generator:
 - Personalized reports for operation and traceability
 - Export to Excel and PDF
- Smartphone App:
 - Unit setup and configuration
 - Irrigation programming and manual operation

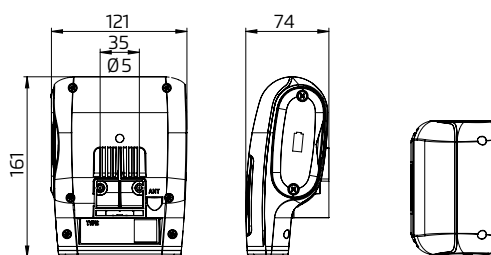




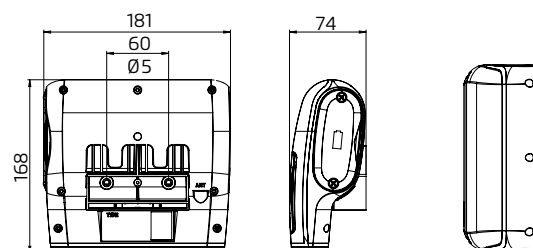
Dimensions

Omega S, Omega R

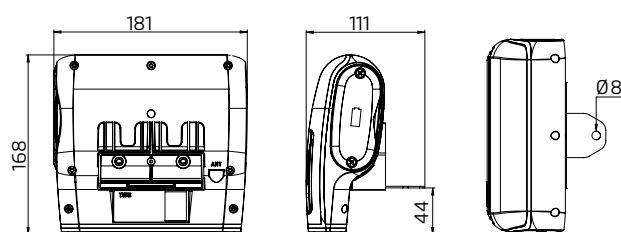
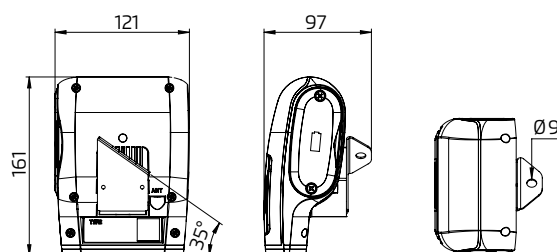
Wall mounted



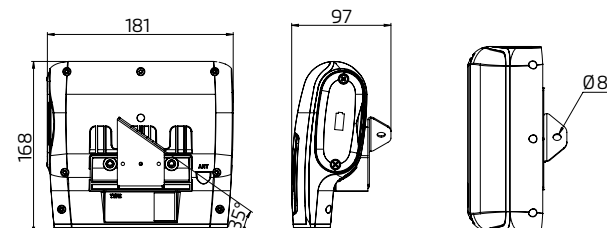
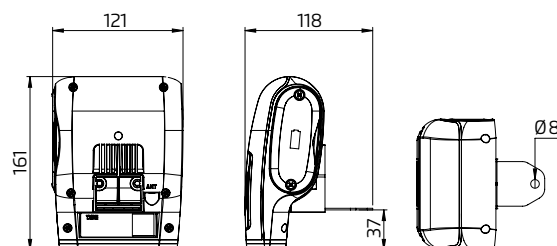
Omega L, Omega M



Globe Valve Adaptor

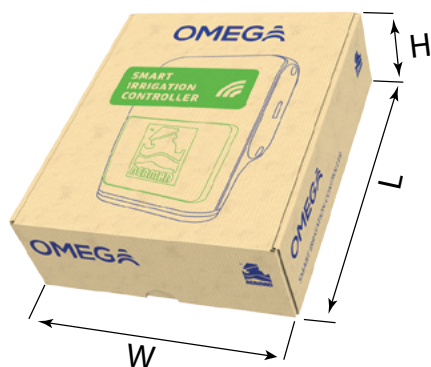


Oblique Valve Adaptor*



* Not included in Omega Kit. Please consult BERMAD personnel for further information

Packing Specifications



Omega Series		
	Omega S Omega R	Omega M Omega L
No. of Units	1	1
Length [cm]	25	27.5
Width [cm]	21	22.5
Height [cm]	8	9
Gross Weight (Kg)	1.23	1.45



Omega S & Omega R controllers

Cloud base Irrigation controller

Omega Controllers

Description	Number Of Inputs	Number Of Outputs	Power Inlet/Outlet	Communication Type
Omega S Controller Kit with External antenna	4 Digital inputs, 2 Analog Inputs	5 Outputs	12 V DC, 17 V DC-Latch	Cellular, BLE
Omega R Controller Kit with External antenna	4 Digital inputs, 2 Analog Inputs	4 Outputs	12 V DC, 17 V DC-Latch	Cellular, BLE, RS-485 (Modbus)

* Omega Kits include Universal Power Adaptor, Global SIM card, Wall mount bracket, Valve mount adaptor & Quick start guide

** Prices include a one-year cloud subscription fee

*** All kits include an SMA connection for an external antenna. If necessary, an external antenna extender will be provided



Omega L & M controllers

Cloud base Irrigation controller

Omega L&M controllers

Description	Number Of Inputs	Number Of Outputs	Power Inlet/Outlet	Communication Type
Omega M Controller Kit with External antenna	8 Digital inputs, 2 Analog Inputs	9 Outputs	12 V DC, 17 V DC-Latch	Cellular, BLE, RS-485 (Modbus)
Omega L Controller Kit with External antenna	4 Digital inputs, 2 Analog Inputs	13 Outputs	12 V DC, 17 V DC-Latch	Cellular, BLE, RS-485 (Modbus)

* Omega Kits include Universal Power Adaptor, Global SIM card, Wall mount bracket, Valve mount adaptor & Quick start guide

** Prices include a one-year cloud subscription fee

*** All kits include an SMA connection for an external antenna. If necessary, an external antenna extender will be provided



Omega additional features

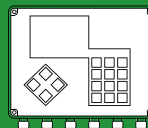
Code	Description
ASF	Annual subscription to BERMAD Cloud services, per controller (net price)
PV-10W-XUNZ	Solar panel Assy. PV-10W, with Bracket & 3m DC Cable
U-KIT	Pole Assy. U bolt Saddle Clamp adapter
M8Y	M8 Bracket for Y pattern valve assy.
EX-4G-SMA	External 4G Antenna with 3m cable and female SMA connector

Annual subscription to BERMAD Cloud services includes:

- Global SIM Data Plan, with cellular redundancy
- Secured end-to-end communication
- Database safeguarded in professional Server farms & Exhaustive backup routines
- Controller Firmware update over the air (FOTA)
- Remote support from BERMAD teams







IR-BIC Series

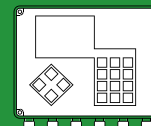
BERMAD's line of irrigation controllers provides a wide range of monitoring, control and analysis solutions for a wide range of irrigation applications.

The BERMAD BIC Series allows for healthier plants and better yields, through the use of efficient management tools for applying nutrients and water to where they are needed most.

The BIC Series gives the user the management tools for efficient use of resources such as water, energy, chemicals, and manpower and is cost effective.

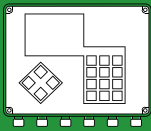
Typical Applications

- Reservoir management
- Pump stations control
- Filter stations
- Water and pressure monitoring
- Chemical injection
- Emission devices control
- Environmental monitoring
- Irrigation control



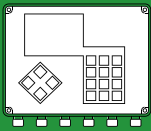
Features and Benefits

- **Modular Hardware:**
 - Local DC or AC outputs and digital inputs
 - Single Cable, Two-Wire
 - Radio
 - Weather monitoring and evapotranspiration control
 - pH/EC monitoring and control
 - Analog inputs
- **Irrigation:**
 - Multiple irrigation programs and fields including pumps, filters, chemical injectors, and valves can be define in a single controller
 - Water dosage by time, volume, volume per area, and evapotranspiration
 - Irrigation by days of the week or cycle of days
 - Single cycle or pulse irrigation
 - Start by time, manually, and/ or physical or environmental conditions
 - Each program allows the control of single valve, sequence of valves and/or groups of valves
- Hydraulic considerations for system protection
- Managing multiple water sources including pump stations with multiple pumps in each location, storage tanks and reservoirs
- **Chemical injection:**
 - Local and multiline (central) injection sites.
 - Chemical dosage modes:
 - Continuous
 - Concentration
 - Proportional
 - Three stage injection: Pre-water, injection, post water
- **Filtration management:**
 - Local and multiline filter stations sites
 - Flush by time, pressure differential (PD), or both time and PD
 - Adjustable parameters
 - "Endless looping" detection and prevention
 - Accumulation of flush cycles by time, PD, and manual
- **Alarms:**
 - High flow, low flow, leaks, pipe breaks, low pressure
 - Chemical leakage, injector malfunction
 - PD sensor failure
 - Low battery, no AC power (For AC controllers)
- **Internet Communication Channels:**
 - USB or GSM modem operating on most common cellular networks
 - Ethernet cable
 - E-mail notifications sent directly from local controller to assigned subscriber
- **General:**
 - Multi language controller
 - Large graphic LCD and full numeric keyboard
 - Multi-level programming to fit User Interface (UI) to specific application and user
 - Conditions system allows start, stop, enable or disable programs
 - Detailed event log for all system events



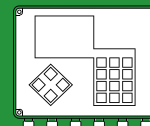
Primary Features	Secondary Features	Accessories	Uniliner		100
			RF	Two-wire	BIC 100
Form of irrigation	Time				✓
	Volume				
	SMART Control	Weather Station			
		Sensor			✓
		Flow/pressure Monitoring			
		ET			
		Volume/Area (In/Sqr Ft)			
Output type (Valves, pumps, etc.)	AC				✓
	DC (Latch)	Radio	✓		
		Two-Wire		✓	
		Controller Direct			✓
	DC (Continuous)				
Input type (Sensors, water meter, etc.)	Local	Dry Contact			✓
		Analog			
	Remote	Dry Contact	✓	✓	
		Analog			
Power source	110VAC / 220VAC		✓	✓	✓
	Solar + battery		✓	✓	✓
	Batteries (D Size)				✓
Central Control			✓	✓	
Communication	Cellular				
	Radio				
Number of outputs			8-32	8-32	2-10
Number of digital inputs			8-16	8-16	3



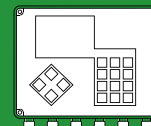


BIC 1000				BIC 1500			BIC 2500		
DC	AC	RF	2W	AC	DC	RF	AC/DC	RF	Two-wire
✓	✓	✓	✓		✓	✓	✓	✓	✓
					✓	✓	✓	✓	✓
					✓	✓	✓	✓	✓
✓	✓	✓	✓		✓	✓	✓	✓	✓
					✓	✓	✓	✓	✓
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12-32	12-36	12-32	12-32		4-16	0-32	16-1000	16-1000	16-1000
4	4	4	4		8	0-23	8-1000	8-1000	8-1000





B25	220	32A	016	00	AL	TG																																																																																																																															
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R45

2WI

Additional Feature 1	Code
2-Wire Interface	2WI
RADIO G5	RG5
RADIO G5H	G5H
RADIO G5L	G5L
Radio G 4.5	R45
External Antenna Radio G 4.5	E45
Radio G 4	R40
Radio Analog Interface	RFA
Radio Interface Without Master	RFI
Ec/Ph Interface	EPI
Smart Pump	FSP
Platform	FPL
Weather Station	WEI
2-Wire Analog Interface	2WA
Local Temperature And Humidity	LTH
Radio Temperature And Humidity	RTH
Radio Analog Interface	RFA
2-Wire Analog Interface	2WA
2-Wire Parts	2WP

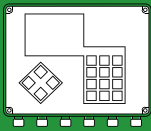
WEI

Additional Feature 3	Code
2-Wire Interface	2WI
RADIO G5	RG5
RADIO G5H	G5H
RADIO G5L	G5L
Radio G 4.5	R45
External Antenna Radio G 4.5	E45
Radio G 4	R40
Radio Analog Interface	RFA
Radio Interface w/out Master	RFI
EC/Ph Interface	EPI
Smart Pump	FSP
Platform	FPL
Weather Station	WEI
2-Wire Analog Interface	2WA
Local Temperature & Humidity	LTH
Radio Temperature & Humidity	RTH
Radio Analog Interface	RFA
2-Wire Analog Interface	2WA
2-Wire Parts	2WP

2WA

Additional Feature 2	Code
2-Wire Interface	2WI
RADIO G5	RG5
RADIO G5H	G5H
RADIO G5L	G5L
Radio G 4.5	R45
External Antenna Radio G 4.5	E45
Radio G 4	R40
Radio Analog Interface	RFA
Radio Interface w/out Master	RFI
EC/Ph Interface	EPI
Smart Pump	FSP
Platform	FPL
Weather Station	WEI
2-Wire Analog Interface	2WA
Local Temperature & Humidity	LTH
Radio Temperature & Humidity	RTH
Radio Analog Interface	RFA
2-Wire Analog Interface	2WA
2-Wire Parts	2WP

Additional Feature 4	Code
2-Wire Interface	2WI
RADIO G5	RG5
RADIO G5H	G5H
RADIO G5L	G5L
Radio G 4.5	R45
External Antenna Radio G 4.5	E45
Radio G 4	R40
Radio Analog Interface	RFA
Radio Interface w/out Master	RFI
EC/Ph Interface	EPI
Smart Pump	FSP
Platform	FPL
Weather Station	WEI
2-Wire Analog Interface	2WA
Local Temperature & Humidity	LTH
Radio Temperature & Humidity	RTH
Radio Analog Interface	RFA
2-Wire Analog Interface	2WA
2-Wire Parts	2WP



GreenApp 3-Way Controller, Application Operated

GreenApp 3-Way

Description	Power Inlet/Outlet	Communication Type
Irrigation Controller & Solenoid "GreenApp" 3 way Bluetooth with Mobile App	3V BATTERY OPERATED	BLE



BIC 1 - One Station Irrigation Controller

BIC 1

Description	Number Of Outputs	Power Inlet/Outlet
BIC1 Controller KIT with ¾" valve	1 Outputs	3V BATTERY OPERATED
BIC1 Controller KIT with 1" valve	1 Outputs	3V BATTERY OPERATED

* = Options for languages (English / Spanish)



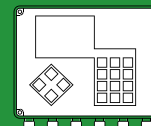
BIC 2 / 4 / 6 - Two, Four or Six Stations Irrigation Controller

BIC 2 - 4 - 6

Description	Number Of Outputs	Power Inlet/Outlet
BIC2 Controller KIT (Box Controller and IOM)	2 Outputs	3V BATTERY OPERATED
BIC2 Controller KIT with 2x¾" Valves and PRV	2 Outputs	3V BATTERY OPERATED
BIC2 Controller KIT with 2x1" Valves and PRV	2 Outputs	3V BATTERY OPERATED
BIC4 Controller KIT (Box Controller and IOM)	4 Outputs	3V BATTERY OPERATED
BIC4 Controller KIT with 3x¾" Valves and PRV	4 Outputs	3V BATTERY OPERATED
BIC4 Controller KIT with 3x1" Valves and PRV	4 Outputs	3V BATTERY OPERATED
BIC6 Controller KIT (Box Controller and IOM)	6 Outputs	3V BATTERY OPERATED
BIC6 Controller KIT with 3x¾" Valves and PRV	6 Outputs	3V BATTERY OPERATED
BIC6 Controller KIT with 3x1" Valves and PRV	6 Outputs	3V BATTERY OPERATED

* = Options for languages (English / Spanish)





BIC F Filter Flush Controllers

with Analog DP

BIC F

Description	Number Of Inputs	Number Of Outputs	Power Inlet/Outlet
BIC F DC	1 DP analog input	2 Outputs	6V Battery
		4 Outputs	6V Battery
		6 Outputs	6V Battery
		8 Outputs	6V Battery
		10 Outputs	6V Battery
BIC F AC	1 DP analog input	2 Outputs	220 V AC
		4 Outputs	220 V AC
		6 Outputs	220 V AC
		8 Outputs	220 V AC
		10 Outputs	220 V AC
		2 Outputs	120 V AC
		4 Outputs	120 V AC
		6 Outputs	120 V AC
		8 Outputs	120 V AC
		10 Outputs	120 V AC



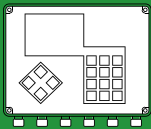
BIC 1000 Time Based Professional Control- NO Communication

BIC 1000-NC

Description	Number Of Inputs	Number Of Outputs	Power Inlet/Outlet
BIC 1000 AC	4 Digital inputs	12 Outputs	220 V AC, 24 V AC
		18 Outputs	220 V AC, 24 V AC
		24 Outputs	220 V AC, 24 V AC
		30 Outputs	220 V AC, 24 V AC
		36 Outputs	220 V AC, 24 V AC
		12 Outputs	120 V AC, 24 V AC
		18 Outputs	120 V AC, 24 V AC
		24 Outputs	120 V AC, 24 V AC
		30 Outputs	120 V AC, 24 V AC
		36 Outputs	120 V AC, 24 V AC
BIC 1000 DC Local outputs	4 Digital inputs	16 Outputs	12 V DC, 12 V DC-Latch
		32 Outputs	12V Battery, 12 V DC-Latch



**= Options for languages (EN=English / SP=Spanish / US=English US / PT=Portuguese)



BIC 1000 Time Based Professional Control With Communication

BIC 1000-WC

Description	Number Of Inputs	Number Of Outputs	Power Inlet/Outlet
BIC 1000 AC	4 Digital inputs, 2 Analog Inputs	12 Outputs	220 V AC, 24 V AC
		18 Outputs	220 V AC, 24 V AC
		24 Outputs	220 V AC, 24 V AC
		30 Outputs	220 V AC, 24 V AC
		36 Outputs	220 V AC, 24 V AC
		12 Outputs	120 V AC, 24 V AC
		18 Outputs	120 V AC, 24 V AC
		24 Outputs	120 V AC, 24 V AC
		30 Outputs	120 V AC, 24 V AC
		36 Outputs	120 V AC, 24 V AC



**= Options for languages (EN=English / SP=Spanish / US=English US / PT=Portuguese)

BIC1500 DC

BIC 1500 medium size irrigation controller with communication and wifi

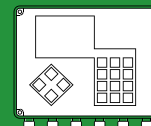
BIC 1500

Description	Number Of Inputs	Number Of Outputs	Power Inlet/Outlet	Communication Type
BIC1500 DC + WiFi + Modem 3G	8 Digital inputs, 4 Analog Inputs	4 Outputs	12 V DC-Latch	Cellular, WiFi
		8 Outputs	12 V DC-Latch	Cellular, WiFi
		12 Outputs	12 V DC-Latch	Cellular, WiFi
		16 Outputs	12 V DC-Latch	Cellular, WiFi
BIC1500 DC + WiFi + Modem 3G + RF G5	8 Digital inputs, 4 Analog Inputs	4 Outputs	12 V DC-Latch	Cellular, Radio, WiFi
		8 Outputs	12 V DC-Latch	Cellular, Radio, WiFi
		12 Outputs	12 V DC-Latch	Cellular, Radio, WiFi
		16 Outputs	12 V DC-Latch	Cellular, Radio, WiFi



- * Battery & Solar Panel are not include
- * Full system may require more communication components. for a full quotation please contact Bermad digital support
- * Cloud connection requires annual subscription fee.





BIC 2500 Complete Management System

Local and Central Monitoring, Analyzing and Control Systems With Cellular Communication

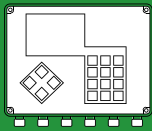
BIC 2500

Description	Number Of Inputs	Number Of Outputs	Power Inlet/Outlet	Communication Type
BIC 2500 Local outputs and inputs	8 Digital inputs	16 Outputs	220 V AC, 24 V AC	
	16 Digital inputs	32 Outputs	220 V AC, 24 V AC	
	8 Digital inputs	16 Outputs	120 V AC, 24 V AC	
	16 Digital inputs	32 Outputs	120 V AC, 24 V AC	
	8 Digital inputs	16 Outputs	220 V AC, 12 V DC-Latch	
	16 Digital inputs	32 Outputs	220 V AC, 12 V DC-Latch	
	8 Digital inputs	16 Outputs	120 V AC, 12 V DC-Latch	
	16 Digital inputs	32 Outputs	120 V AC, 12 V DC-Latch	
	8 Digital inputs	16 Outputs	12 V DC-Latch	
	16 Digital inputs	32 Outputs	12 V DC-Latch	
BIC 2500 Local and 2-wire outputs and inputs	8 Digital inputs	16 Outputs	220 V AC, 24 V AC	2-Wire
	16 Digital inputs	32 Outputs	220 V AC, 24 V AC	2-Wire
	8 Digital inputs	16 Outputs	120 V AC, 24 V AC	2-Wire
	16 Digital inputs	32 Outputs	120 V AC, 24 V AC	2-Wire
	8 Digital inputs	16 Outputs	220 V AC, 12 V DC-Latch	2-Wire
	16 Digital inputs	32 Outputs	220 V AC, 12 V DC-Latch	2-Wire
	8 Digital inputs	16 Outputs	120 V AC, 12 V DC-Latch	2-Wire
	16 Digital inputs	32 Outputs	120 V AC, 12 V DC-Latch	2-Wire
	8 Digital inputs	16 Outputs	12 V DC-Latch	2-Wire
	16 Digital inputs	32 Outputs	12 V DC-Latch	2-Wire
BIC 2500 2-Wire outputs and inputs			220 V AC, 12 V DC-Latch	2-Wire
			120 V AC, 12 V DC-Latch	2-Wire
			12 V DC-Latch	2-Wire



* Full system may require more communication components. for a full quotation please contact Bermad digital support

* Cloud connection requires annual subscription fee.



BIC 2500 Complete Management System

Local and Central Monitoring, Analyzing and Control System With Cellular Communication with Radio G5

BIC 2500-G5

Description	Number Of Inputs	Number Of Outputs	Power Inlet/Outlet	Communication Type
BIC 2500 Local and G5 radio outputs and inputs	8 Digital inputs	16 Outputs	220 V AC, 24 V AC	Radio
	16 Digital inputs	32 Outputs	220 V AC, 24 V AC	Radio
	8 Digital inputs	16 Outputs	120 V AC, 24 V AC	Radio
	16 Digital inputs	32 Outputs	120 V AC, 24 V AC	Radio
	8 Digital inputs	16 Outputs	220 V AC, 12 V DC-Latch	Radio
	16 Digital inputs	32 Outputs	220 V AC, 12 V DC-Latch	Radio
	8 Digital inputs	16 Outputs	120 V AC, 12 V DC-Latch	Radio
	16 Digital inputs	32 Outputs	120 V AC, 12 V DC-Latch	Radio
	8 Digital inputs		12 V DC-Latch	Radio
	16 Digital inputs		12 V DC-Latch	Radio
BIC 2500 G5 Radio outputs and inputs			220 V AC, 12 V DC-Latch	Radio
			120 V AC, 12 V DC-Latch	Radio
			12V Battery, 12 V DC-Latch	Radio



*All models 2500-G5 with Radio can be Tylor made up to 1,000 outputs with RTU units
Full system may require more communication components. for a full quotation please contact Bermad digital support
* Cloud connection requires annual subscription fee.







S-Series

Continuous Current Solenoids

BERMAD Continuous Current Solenoids are specially designed for reliable long life service in irrigation systems. They excel in their low power consumption and low sensitivity to dirt and voltage variations and are compliant with all Continuous Current Controllers on the market.

Latching Solenoids Series

BERMAD Latching Solenoids are specially designed for reliable long life service in irrigation systems controlled by Battery Operated Controllers. The Latching Solenoids consume power only when switching positions, using a very short electric impulse. This prolongs life of batteries and enables solar recharging.



2-Way Solenoid

S-390T-2W

The BERMAD S-390T-2W is a compact 2-Way, Continuous Current (AC /DC) Normally Closed, Solenoid Actuator. It is applicable directly to the valve cover or with a 2-Way Trio base that enables combining the S-390T-2W in a variety of 2-Way control circuits.

Electrical Data

Actuator Type	Cable Color	Power (Watt)	Current (Amp)		Resistance ohm@20°C; 68°F
			Inrush	Hold	
S390T-2W-24VAC	Red/Red	1.7	0.25	0.125	37.5
S390T-2W-24VDC	Black/Black	3.6	0.18	0.18	156
S390T-2W-12VDC	Blue/Blue	4.0	0.33	0.33	36



3-Way Solenoid

S-390T-3W

The BERMAD S-390T-3W is a compact 3-Way Solenoid. It can control valves independently or in combination with other control circuit accessories. The hydraulic base features a manual override and consists of a bracket for attaching to the valve or to a solenoid manifold.

Electrical Data

Actuator Type	Cable Color	Power (Watt)	Current (Amp)		Resistance ohm@20°C; 68°F
			Inrush	Hold	
S-390T-3W-24VAC NO / NC	Red/Red	2.9	0.46	0.24	20
S-390T-3W-24VDC NO / NC	Black/Black	4.2	0.17	0.17	135
S-390T-3W-12VDC NO / NC	Blue/Blue	4.0	0.33	0.33	36

N.O.

Actuator Port - Pressure

1- Vent

2- Valve Control Chamber

N.C.

Actuator Port - Vent

1- Pressure

2- Valve Control Chamber



N.O.



N.C.

Magnetic Latch Solenoid Actuator, 2-Way, 9-20VDC Latch, 2- Leads

S-392T-2W

The BERMAD Model S-392-T-2W is a compact 2-Way Latching Solenoid Actuator. It is applicable directly to the valve cover or with a 2-way base that enables combining it in variety of 2-way control circuits.

Electrical Data:

Voltage Range: 9-20 VDC

Coil Resistance: 6

Coil Inductance: 90 mH

Pulse Width: 20-100 mSec.

Operation Modes (electrical connections):

+Red & -Black: Latch Position

+Black & -Red: Released Position





Magnetic Latch Solenoid with Hydraulic Base

3-Way, 9-20VDC Latch, 2- Leads

S-392-T-3W-B

The BERMAD Model S-392T-3W can control valves independently or in combination with other control circuit accessories. The hydraulic base features a manual override and consists of a bracket for attaching to the valve or to a solenoid manifold.

Electrical Data:

Voltage Range: 9-20 VDC

Coil Resistance: 6

Coil Inductance: 90 mH

Pulse Width: 20-100 mSec

Operation Modes (electrical connections):

+Red & - Black: Solenoid vents

+Black & - Red: Solenoid pressurizes

Pressure & Flow Data:

Operating Pressure Range: 0-10 bar

Top Orifice Diameter: 1.6 mm

Base Flow Factor:

Kv = 0.08 m³/h @1 bar ΔP; Cv = 0.09 GPM @1 psi ΔP

Connections:

1:..... Vent

C:..... Valve control Chamber

Actuator Port:... Pressure



Dry Magnetic Latch Solenoid

with Isolating Membrane & Hydraulic Base

3-Way, 12VDC Latch, 2/3- Leads

S-982/5-3W

The BERMAD Model S-982/5-3W actuator is neutralized from water damage by a membrane, which hermetically isolates it from the water. It can control valves independently or in combination with other control circuit accessories. The hydraulic base features a manual override and consists of a bracket for attaching to the valve or to a solenoid manifold.

Electrical Data:

Voltage Range: 12-50 VDC

Coil Resistance: 4.2

Pulse Width: 20-100 mSec.

Operation Modes (electrical connections):

+ Red & - Black: Solenoid vents

+ Black & - Red: Solenoid pressurizes

Pressure & Flow Data:

Operating Pressure Range: 0-10 bar

Base Orifice Diameter: 2 mm

Base Flow Factor:

Pressure port Kv = 0.12 m³/h @ 1 bar ΔP

Cv = 0.14 GPM @1 psi ΔP

Exhaust port Kv = 0.14 m³/h @ 1 bar ΔP

Cv = 0.16 GPM @1 psi ΔP



Connections:

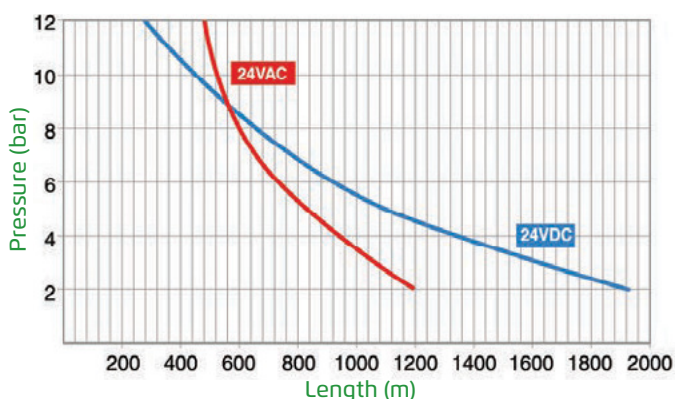
1- Vent 2- Valve Control Chamber 3- Pressure

Electrical Data for S-390T-2W

Maximum cable length according to coil type

Cable cross section: 0.5 mm²,

orifice size: 1.8 mm, air gap: 0.7 mm



For cables longer than shown in diagram

In order to calculate the cross section of a length other than shown in the diagram, use the following equation:

$$S = \frac{L \text{ (sol)}}{L \text{ (diagram)}} \times 0.5$$

S = Minimum conductor cross-section in mm²

L (sol) = Actual Length of cable to solenoid

L (diagram) = Length of cable shown in this diagram

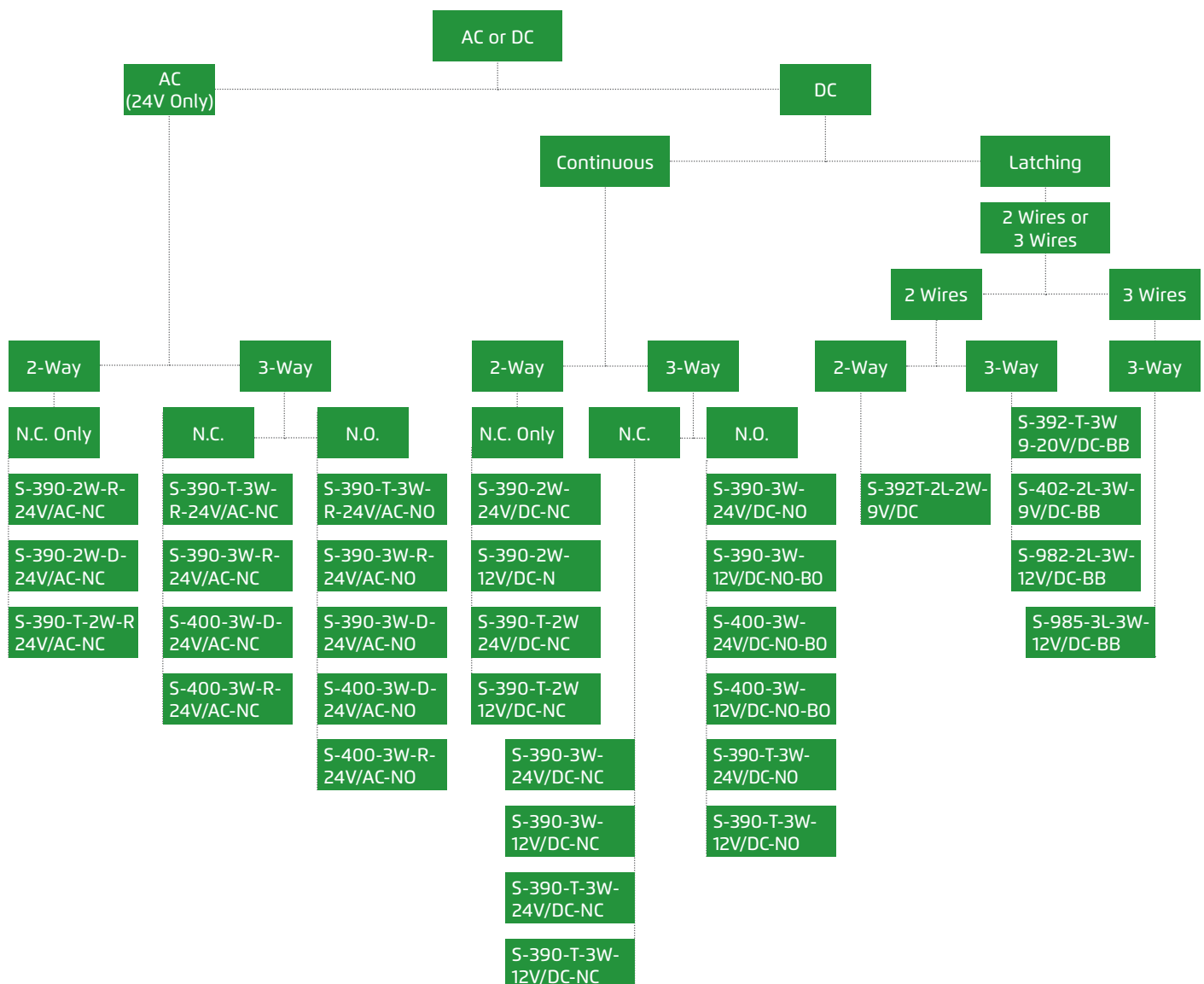


Solenoid Selection Guide

The automation design is an integral part of the irrigation project design file. In order to help in the selection process of the most suitable solenoids for a given project, several questions need to be answered. Following the chart below, will guide you to the desired solenoid model. Please check selected solenoid specifications in the following pages, to confirm its suitability to the project conditions.

Please refer to the following questions for best navigation:

- **Operating Current:** Alternating Current (AC) or Direct Current (DC)
- **Solenoid Logic:** 2-Way or 3-Way
- **Actuator Type:** Continuous Current or Latching
- **Solenoid Normal Position:** Normally Open or Normally Closed
- **Controller Requirements:** Two Wires or Three Wires



Notes:

- To get a 3-Way controlled N.C. main valve, use a N.O. 3-Way solenoid and vice versa.
- The S-982 and S-985 actuators are isolated from the water.
- Actuators with the suffix 'R' are suitable to areas with high lightning's probability
- Calculate wires cross section in accordance to:
 - System pressure conditions
 - Solenoids consumption, quantity & distance



2-Way Solenoid Actuator for Trio

S-390-T-2W

Voltage	Normal State	Number of Leads/Color	Ways
24 V AC	NC - Normally Close	2 - Red/Red	2W
24 V DC	NC - Normally Close	2 - Black/Black	2W

S-390-T-2W-R-24V/AC-NC



2-Way Solenoid Pilot Valve with Plastic Base

S-390-T-2W P.B.

Voltage	Normal State	Number of Leads/Color	Ways	Hydraulic Base
24 V AC	NC - Normally Close	2 - Red/Red	2W	Plastic 2W
24 V DC	NC - Normally Close	2 - Black/Black	2W	Plastic 2W

S-390-T-2W-R-24V/AC-NC



3-Way Solenoid Actuator

S-390-T-3W

Voltage	Normal State	Number of Leads/Color	Ways
24 V AC	N.O / N.C	2 - Red/Red	3W
24 V DC	N.O / N.C	2 - Black/Black	3W
12 V DC	N.O / N.C	2 - Blue/Blue	3W



3-Way Solenoid Pilot Valve with Trio Plastic base

S-390-T-3W P.B.

Voltage	Normal State	Number of Leads/Color	Ways	Hydraulic Base
24 V AC	N.O / N.C	2 - Red/Red	3W	Plastic 3W
			3W	Plastic 3W
24 V DC	N.O / N.C	2 - Black/Black	3W	Plastic 3W





Magnetic Latch Solenoid Actuator

S-392-T-2W

2-Way, 9-20V/DC Latch, 2-Leads

Voltage	Normal State	Number of Leads/ Color	Ways
9-20 V DC Latch	N.O / N.C	2 - Red & Black	2W



Magnetic Latch Solenoid Pilot Valve

with Hydraulic Base

S-392-T-3W P.B

3-Way, 9-20VDC Latch, 2- Leads

Voltage	Normal State	Number of Leads/ Color	Ways	Hydraulic Base
9-20 V DC Latch	N.O / N.C	2 - Red & Black	3W	Plastic 3W



Dry Magnetic Latch Solenoid Pilot Valve

with Isolating Membrane & Hydraulic Plastic Base

S-982-3W P.B.

3-Way, 12-50V/DC Latch, 2-Leads

Voltage	Normal State	Number of Leads/ Color	Ways	Hydraulic Base
12-50 V DC latch	N.O / N.C	2 - Red & Black	3W	Plastic 3W



Dry Magnetic Latch Solenoid Pilot Valve

with Isolating Membrane & Hydraulic Metal Base

S-982-3W M.B.

3-Way, 12-50V/DC Latch, 2-Leads

Voltage	Normal State	Number of Leads/ Color	Ways	Hydraulic Base
12-50 V DC latch	N.O / N.C	2 - Red & Black	3W	Brass 3W





Dry Magnetic Latch Solenoid Pilot Valve

with Isolating Membrane & Hydraulic Plastic

S-985-3W P.B.

3-Way, 12-50V/DC Latch,

Voltage	Normal State	Number of Leads/Color	Ways	Hydraulic Base
12-50 V DC latch	N.O / N.C	3- Red-Black & white	3W	Plastic 3W



Dry Magnetic Latch Solenoid Pilot Valve

with Isolating Membrane & Hydraulic Metal

S-985-3W M.B.

3-Way, 12-50V/DC Latch, 2-Leads

Voltage	Normal State	Number of Leads/Color	Ways	Hydraulic Base
12-50 V DC latch	N.O / N.C	3- Red-Black & white	3W	Brass 3W





Packing Specifications

S-390-2W

S-392-2W

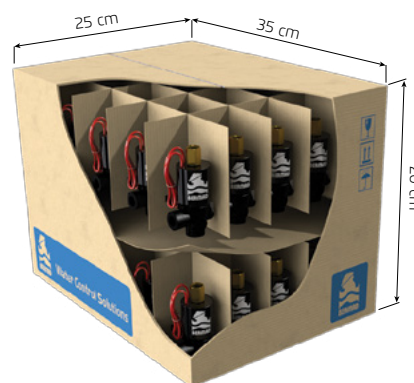


S-390-3W



	S-390/392-2W	S-390-3W
No. of Layers	2	2
No. of Units	100	100
Length [cm]	35	35
Width [cm]	25	25
Height [cm]	20	20
Gross Weight	12.74	13.74
Volume [m ³]	0.02	0.02

S-390-3W-BB



	S-390-3W-BB	
No. of Layers	2	1
No. of Units	50	25
Length [cm]	35	35
Width [cm]	25	25
Height [cm]	20	11.6
Gross Weight	8	4
Volume [m ³]	0.02	0.01

S-400/402; S-982/985



S-400/402; S-982/985	
No. of Layers	2
No. of Units	50
Length [cm]	31
Width [cm]	23
Height [cm]	24.5
Gross Weight	8.45
Volume [m ³]	0.02

S-400/402; S-982/985	
No. of Layers	1
No. of Units	6
Length [cm]	17.5
Width [cm]	10
Height [cm]	12.5
Gross Weight	1.3
Volume [m ³]	0.002

S-400/402; S-982/985	
No. of Layers	1
No. of Units	20
Length [cm]	25
Width [cm]	25
Height [cm]	15
Gross Weight	3
Volume [m ³]	0.01

BERMAD STANDARD INTERNATIONAL LIMITED WARRANTY

BERMAD CS LTD. & Bermad Water Technologies, ("BERMAD") warrants that, for a period of 12 months from the day of delivery of the product by BERMAD to its customer (the "Warranty Period"), each component of the product shall be free from defects in material or workmanship and shall meet, in all material respects, the products technical specifications as defined by BERMAD.

General Conditions

This warranty shall be valid only if the product is installed, handled and maintained in accordance with BERMAD's written or verbal instructions and/or recommendations, if such has been provided.

This Warranty does not cover defects or damages resulting from accident, inappropriate physical or operational environment, failure of electrical power, improper installation, maintenance, service, repair, transportation, storage, modification, operation, use, negligence or fault by any party other than BERMAD.

This Warranty shall run solely to and in favor of the customer that purchased the defective product directly from BERMAD, and it does not extend to any other purchaser or user of the product.

Claims, Notifications and Compensation

Every warranty claim must be notified in writing to BERMAD as soon as reasonably possible after the discovery of the defective product, enclosing the original sales receipt and this warranty.

The claimant must allow BERMAD to inspect the product involved and the installation site itself, while the product is still in its original position and has not been removed or altered in any way, and/or return the product to BERMAD for testing. BERMAD reserves the right to investigate independently the cause of any failure.

If a claim under this Warranty is properly notified within the Warranty Period and found to be justified by BERMAD, then BERMAD, at its sole option, shall: (i) replace such product; or (ii) repair such product; or (iii) repay to the BERMAD customer any amounts actually paid to BERMAD for such product.

In any way, BERMAD's liability shall not exceed the amounts actually paid by the BERMAD customer to BERMAD for the defective products.

Limitations

This Warranty is the sole warranty in respect to the products.

Under no circumstances shall BERMAD be liable for any indirect, special or consequential damages, and including, without limitation, for any loss of profit, loss in connection with business interruption, loss of use, loss of revenues or damage to business or reputation.

This warranty does not cover any costs and expenses of removal and installation of the product or shipping cost or taxes or any other direct or indirect loss(es) which may result from the product failure, and BERMAD shall not be liable for such costs and expenses.

OTHER THAN HAS BEEN SPECIFICALLY STATED IN THIS WARRANTY, ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING ALL IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED SO FAR AS THE LAW PERMITS.



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Irrigation

