Pressure-Operated Water Regulating Valves

Technical Data Sheet

OVERVIEW

- Detects refrigerant pressure in water-cooled condensers and regulates cooling-water flow.
- Helps maintain stable refrigeration-system operation while reducing cooling-water consumption.
- Suitable for fluorocarbon refrigerants including R22, R134a, and R404A.

PRODUCT RANGE

This datasheet covers the following valve series:

CWR	AWR	GWR	MWR	SWR
Two-way valve	Two-way valve	Two-way valve	Two-way valve	Three-way valve

SERIES COVERED AT A GLANCE

Configuration	Series	Model Range	Application	Refrigerants	Max. Pressure (MPa)	Max. Fluid Temp. (C)
Two-way	CWR	803GLWQ1	Water-cooled condensers	R22, R134a, R404A, etc.	2.00	-
	AWR	1204BLW to 3212GLW			1.96	60
	GWR	4014FLW to 6524FLWH			1.96	60
	MWR	4014FLW to 6524FLWH			1.96	60
Three-way	SWR	1504GLW to 3212GLW	Bypass / main-circuit cooling-water control	R22, R134a, R404A, etc.	1.96	60

CONTENTS

Two-Way Valves - CWR and AWR Series

Unit: MPa {kgf/cm2}

Series	Model	Refrigerant	Body	Size	Connection	Adjustable Range	Max. P (Ref.)	Fluid Temp. C	Max. P (Water)	Factory Setting*	Weight kg
CWR	**803GLWQ1**	Fluorocarbon	Copper alloy	3/8 in	Rc	0.60-1.80 {6.0-18.0}	2.00 {20}	-	1.00 {10}	0.75 {7.5}	0.45
AWR	**1204BLW**	Fluorocarbon	Copper alloy	1/2 in	Flare tube	0.59-1.76 {6.0-18.0}	1.96 {20}	60	0.98 {10}	0.88 {9}	0.80
AWR	**1203GLW**	Fluorocarbon	Copper alloy	3/8 in	Rc	0.59-1.76 {6.0-18.0}	1.96 {20}	60	0.98 {10}	0.74 {7.5}	0.66
AWR	**1504GLW**	Fluorocarbon	Copper alloy	1/2 in	Rc	0.59-1.76 {6.0-18.0}	1.96 {20}	60	0.98 {10}	0.74 {7.5}	0.80
AWR	**2006GLW**	Fluorocarbon	Copper alloy	3/4 in	Rc	0.59-1.76 {6.0-18.0}	1.96 {20}	60	0.98 {10}	0.74 {7.5}	1.00
AWR	**2510GLW**	Fluorocarbon	Copper alloy	1 in	Rc	0.59-1.76 {6.0-18.0}	1.96 {20}	60	0.98 {10}	0.74 {7.5}	1.80
AWR	**3212GLW**	Fluorocarbon	Copper alloy	1-1/4 in	Rc	0.59-1.76 {6.0-18.0}	1.96 {20}	60	0.98 {10}	0.74 {7.5}	2.10

NOTES

* Factory setting = valve opening pressure.

* Values in braces are kgf/cm2. Pressure ranges are adjustable within the listed limits.

* Model 1204BLW uses a 1/2 in flare-tube connection; GLW models use Rc threaded connections.

Flanged Two-Way Valves - GWR and MWR Series

Unit: MPa {kgf/cm2}

Series	Model	Refrigerant	Body	Size	Connection	Adjustable Range	Max. P (Ref.)	Fluid Temp. C	Max. P (Water)	Factory Setting*	Weight kg
GWR	4014FLW	Fluorocarbon	Cast iron	1-1/2 in	Flange	0.59-1.18 {6.0-12.0}	1.96 {20}	60	0.98 {10}	0.74 {7.5}	11.2
GWR	5020FLWR	Fluorocarbon	Cast iron	2 in	Flange	R: 0.59-1.18 {6.0-12.0}	1.96 {20}	60	0.98 {10}	R: 0.74 {7.5}	17.8
GWR	5020FLWH	Fluorocarbon	Cast iron	2 in	Flange	H: 1.08-1.76 {11.0-18.0}	1.96 {20}	60	0.98 {10}	H: 1.23 {12.5}	17.8
GWR	6524FLWR	Fluorocarbon	Cast iron	2-1/2 in	Flange	R: 0.59-1.18 {6.0-12.0}	1.96 {20}	60	0.98 {10}	R: 0.74 {7.5}	21.6
GWR	6524FLWH	Fluorocarbon	Cast iron	2-1/2 in	Flange	H: 1.08-1.76 {11.0-18.0}	1.96 {20}	60	0.98 {10}	H: 1.23 {12.5}	21.6
MWR	4014FLW	Fluorocarbon	Copper alloy	1-1/2 in	Flange	0.59-1.18 {6.0-12.0}	1.96 {20}	60	0.98 {10}	0.74 {7.5}	11.2
MWR	5020FLWR	Fluorocarbon	Copper alloy	2 in	Flange	R: 0.59-1.18 {6.0-12.0}	1.96 {20}	60	0.98 {10}	R: 0.74 {7.5}	17.8
MWR	5020FLWH	Fluorocarbon	Copper alloy	2 in	Flange	H: 1.08-1.76 {11.0-18.0}	1.96 {20}	60	0.98 {10}	H: 1.23 {12.5}	17.8
MWR	6524FLWR	Fluorocarbon	Copper alloy	2-1/2 in	Flange	R: 0.59-1.18 {6.0-12.0}	1.96 {20}	60	0.98 {10}	R: 0.74 {7.5}	21.6
MWR	6524FLWH	Fluorocarbon	Copper alloy	2-1/2 in	Flange	H: 1.08-1.76 {11.0-18.0}	1.96 {20}	60	0.98 {10}	H: 1.23 {12.5}	21.6

FLANGE NOTE

JIS 10K (0.98 MPa) circular flanges, blind flanges, and bolts/nuts are available for applicable flanged models.

R and H suffixes identify the standard-range and high-range pressure settings shown above.

SWR Data, Characteristics & Adjustment

Technical Data Sheet

THREE-WAY VALVE DATA (SWR SERIES)

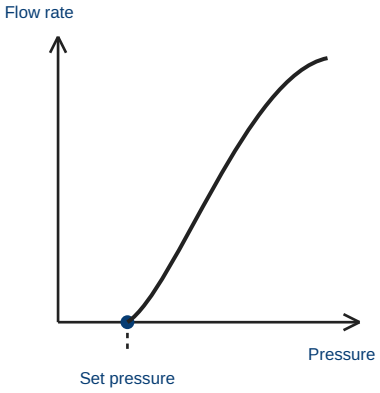
Series	Model	Refrigerant	Body	Size	Connection	Adjustable Range	Max. P (Ref.)	Fluid Temp. C	Max. P (Water)	Factory Setting*	Weight kg
SWR	**SWR-1504GLW**	Fluorocarbon	Copper alloy	1/2 in	Rc	0.59-1.76 {6-18}	1.96 {20}	60	0.98 {10}	0.74 {7.5}	1.1
SWR	**SWR-2006GLW**	Fluorocarbon	Copper alloy	3/4 in	Rc	0.59-1.76 {6-18}	1.96 {20}	60	0.98 {10}	0.74 {7.5}	1.5
SWR	**SWR-2510GLW**	Fluorocarbon	Copper alloy	1 in	Rc	0.59-1.76 {6-18}	1.96 {20}	60	0.98 {10}	0.74 {7.5}	2.5
SWR	**SWR-3212GLW**	Fluorocarbon	Copper alloy	1-1/4 in	Rc	0.59-1.76 {6-18}	1.96 {20}	60	0.98 {10}	0.74 {7.5}	3.0

** Factory setting = valve opening pressure.*

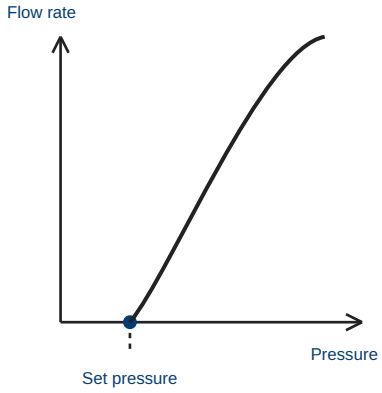
OPERATING CHARACTERISTICS

The factory setting is the pressure at which the valve opens.
Characteristic behavior differs by valve type as shown below.

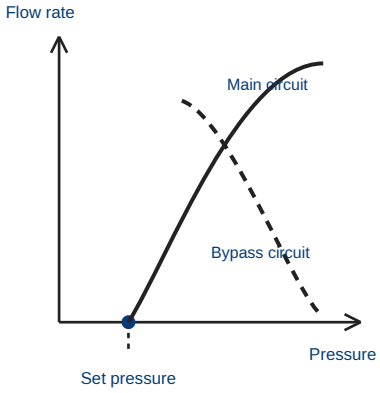
1 CWR / AWR / MWR



2 GWR



3 SWR



ADJUSTMENT

Pressure setting change per one full turn of the adjusting screw

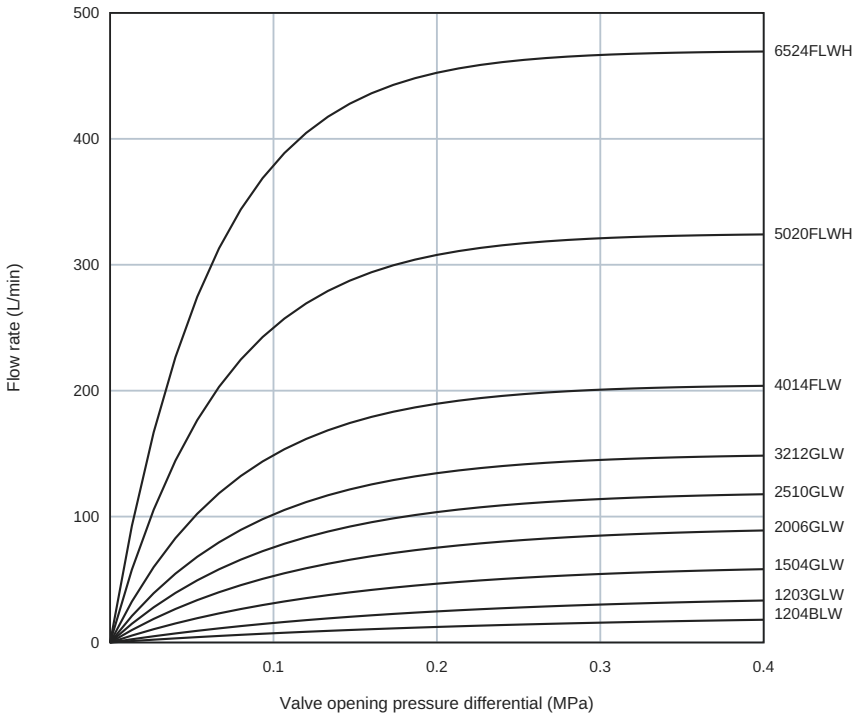
Series Group	Model	Pressure Change
AWR	1204BLW 1203GLW	approx. 0.10 MPa
AWR / GWR / SWR	1504GLW 2006GLW	approx. 0.10 MPa
AWR / GWR / SWR	2510GLW 3212GLW	approx. 0.075 MPa
AWR / MWR / GWR	4014FLW 5020FLW 6524FLW	approx. 0.09 MPa

Flow-Rate Charts

Technical Data Sheet

Flow rate is shown on the vertical axis. The horizontal axis represents refrigerant-pressure differential relative to the valve opening setting.
Charts are based on a water-pressure drop across the valve of 0.1 MPa.

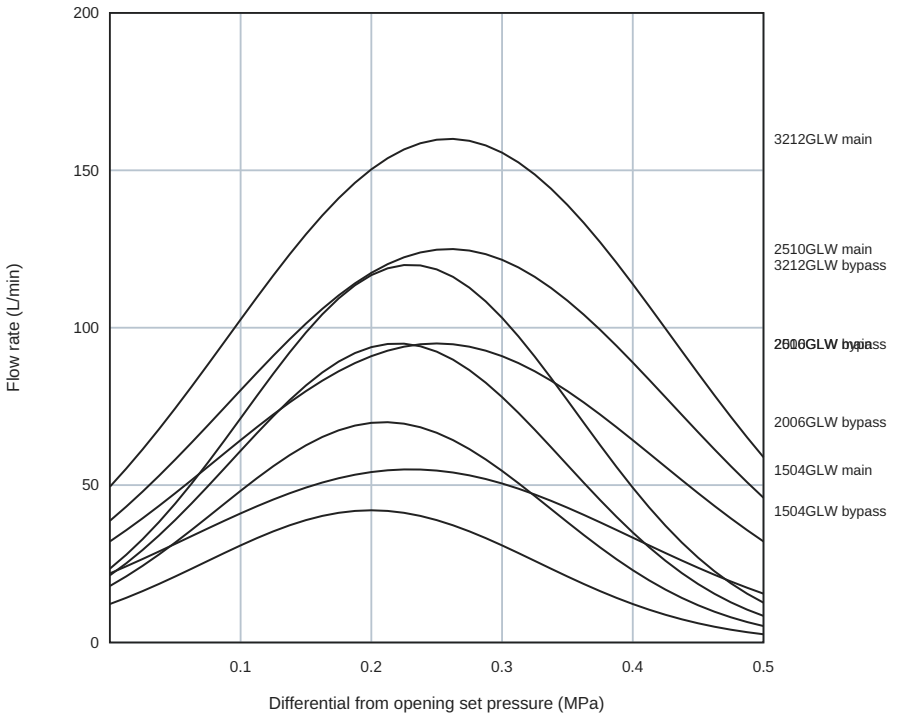
AWR / GWR / MWR TYPE



Opening pressure corresponds to the valve set pressure.

Use within the normal operating region shown.

SWR TYPE

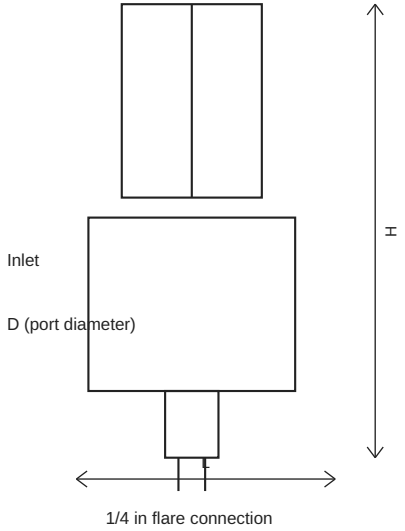


Opening pressure corresponds to the valve set pressure.

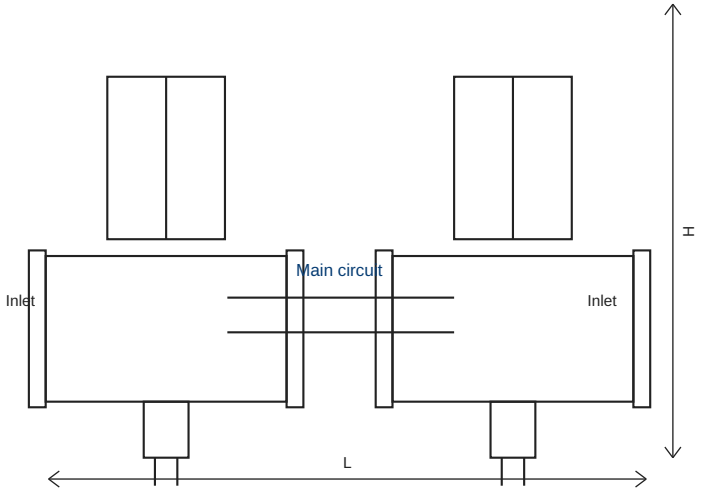
Use within the normal operating region shown.

Unit: mm

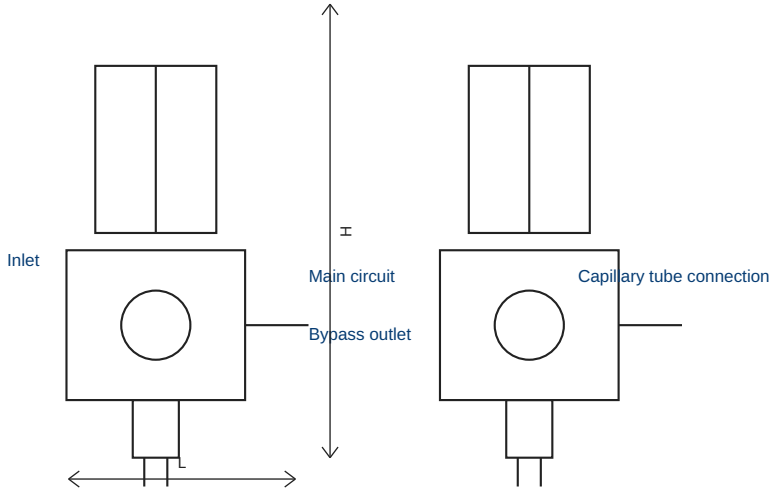
AWR / GWR-G TYPE



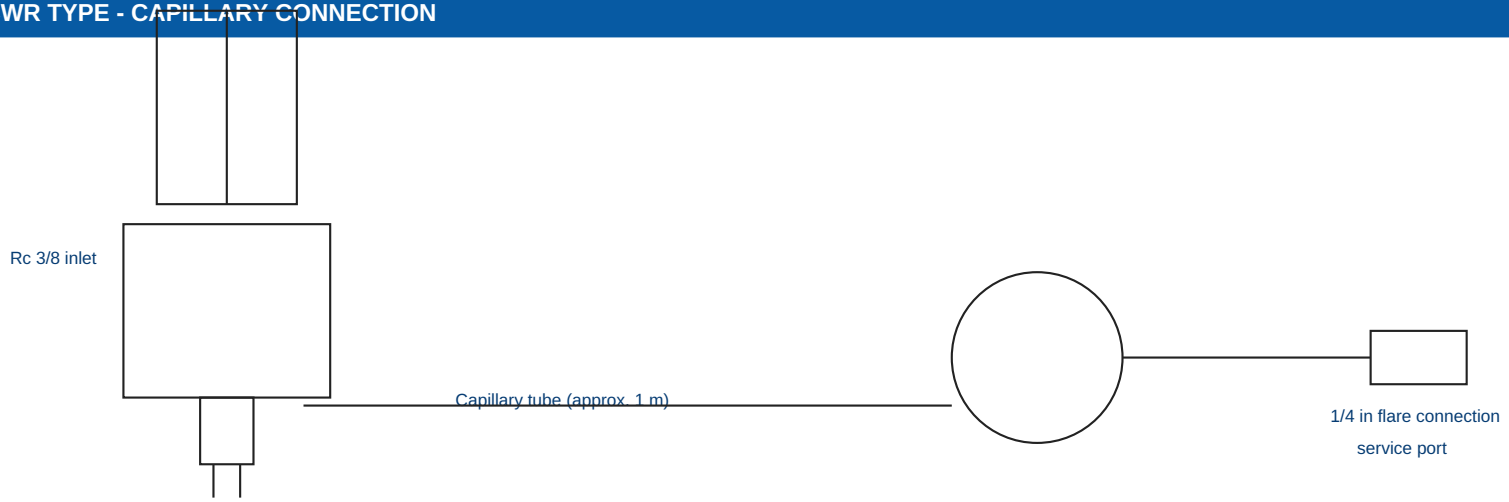
AWR / GWR / MWR-F TYPE



SWR TYPE



CWR TYPE - CAPILLARY CONNECTION



Typical CWR dimensions: overall height 79; upper diameter 23.9; body section 33; lower section 21.

Dimension Table

Technical Data Sheet

Unit: mm

DIMENSIONS

Series	Model	D	L	H	h	h1	C
AWR	AWR-1204BLW	-	100	90	70	-	40
AWR	AWR-1203GLW	22	55	91	72	-	42
AWR / GWR	1504GLW	27	70	100	83	-	42
AWR / GWR	2006GLW	32	80	104	87	-	42
AWR / GWR	2510GLW	40	90	116	97	-	59
AWR / GWR	3212GLW	50	100	121	102	-	59
AWR / MWR / GWR	4014FLW	-	148	125	105	-	89
AWR / MWR / GWR	5020FLW	-	173	180	155	-	89
AWR / MWR / GWR	6524FLW	-	179	180	155	-	89
SWR	1504GLW	27	70	100	31	83	42
SWR	2006GLW	32	80	104	39	87	42
SWR	3212GLW	50	100	121	54	102	59

DIMENSION SYMBOLS

D = port diameter; L = overall connection length; H = overall height; h / h1 = body-section heights; C = actuator enclosure width.

Connection and mounting dimensions should be checked against the selected model before installation.