

Modulating 3-Way Valve

Types MTW-9 and MTW-17



Features and Benefits

- **Improved performance from modulated control**
- **Reduction in number of modulation valves required per system**
 1. Simplified system piping enables piping material cost reduction
 2. Reduced install time enables labor cost reduction
 3. Single actuator reduces control and wiring complexity
- **Utilizes standard 42mm stepper motor**
 1. 6,386 steps of resolution
 2. 75 Ω bipolar stepper motor
 3. 160 mA per winding
- **Bi-sealing piston assembly**



Description

The Modulating 3-Way (MTW) valve allows control of refrigerant flow through two outlet ports. Two valve pistons are attached to a connecting rod and also to the stepper motor. As the MTW valve modulates one port opens and the other port closes. The movement of the valve pistons relative to the two ports is inversely proportional.

Application

The MTW valve is typically located in the discharge line for modulating dehumidification, reheat and heat reclaim applications. Parker recommends piping Outlet A to the normal condenser and Outlet B to the reclaim/reheat condenser. Outlet connections A and B are designated on the valve body (see the figure).

The MTW valve is a sealed design. The valve should not be disassembled for installation or service. Disassembly will damage the valve.

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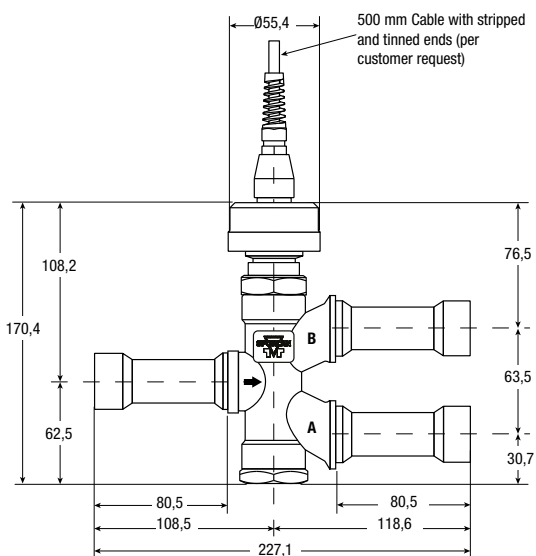
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SPECIFICATIONS

Motor Type	Permanent magnet bipolar internal (wet) motor
Compatible Refrigerant	All common HCFC & HFC refrigerants, including R-410A
Compatible Oil	All common mineral, polyolester and alkylbenzene oils
Supply Voltage (unless current limited)	12 volts DC $\pm 10\%$
Cable	Hermetic (50 cm/20' standard)
Phase Resistance	75 ohms $\pm 10\%$
Stepping Current	160 mA/winding
Holding Current	Not recommended
Number of Full Steps	6,386 full steps
Step Rate	200 steps / second (PPS)
Initialization	7,500 steps closing
Overdriving	Recommended one 10% overdrive closed per day maximum
MRP/MAP/MWP	48.3 bar (700 psig)
MOPD	48.3 bar (700 psig)
Max Internal Leakage	400 cc/min. at 6.9 bar (100 psid) dry air
Max External Leakage	2.8 g./yr. at 20 bar (0.10 oz./yr. at 300 psig)
Max Fluid Temperature Range	-40°C to 116°C (-40°F to 240°F)
Ambient Temperature Range	-40°C to 60°C (-40°F to 140°F)
Installation Maximum Temperature	116°C (240°F) for 15 minutes (wet rag required for brazing)
Relative Humidity	0-100% (condensing)
Mounting Orientation	Motor assembly above horizontal
Flow Direction	Forward flow only
Certification	UL File: SA5460; CCN: SFJQ2/SFJQ8

Dimensions (mm)

MTW-9



MTW-17

