



# PRESSURE, DIFFERENTIAL & TEMPERATURE CONTROLS MP SERIES



- **STURDY MECHANISM**
- **AUTO OR MANUAL RESET**
- **DESIGN FOR USE IN REFRIGERATION SYSTEMS**

Type MP is a single pole double throw (SPDT) pressure control for refrigeration compressors, using R12, R22, R40 & R717 refrigerants.

Construction is simple and sturdy, and the device is enclosed in a dust proof mild steel casting. All parts are rust proof and designed for long life. Starting and stopping pressures can be set independently, and the device has a clearly readable pressure range scale.

**Low Pressure Control :** Type MP1 series is connected to the suction side of the refrigeration plant. The control device makes the circuit to the compressor motor or motor starter when the suction pressure has risen to a preset value, and breaks the circuit when the pressure has dropped to another preset value.

**High Pressure Control :** Type MP5 series is connected to the discharge side of the refrigeration plant. The control device breaks the circuit to the compressor motor or motor starter when the condensing pressure exceeds the preset value, due to failure of air circulation or cooling-water supply, and it makes the circuit when the pressure has dropped to another preset value.

**Combined High and Low Pressure Control :** Type MP15 series is connected to the discharge and suction sides of the system. The control device is a combination of Type MP1 and Type MP5.

**Differential Pressure Control :** Type MP55 is used as a safety device on pressure lubricated refrigeration compressors, where under any operating conditions the lubricating oil pressure has to be kept higher than the suction pressure or crankcase pressure.

The bellows marked OIL is connected to outlet side of compressor or at discharge from crankshaft lubrication system. This element measures the lubricating oil pressure  $P_1$ . Bellows marked LP is connected to the compressor crankcase and measures the crankcase pressure  $P_2$ .

Differential Pressure ( $P_1 - P_2$ ) is the pressure available for the lubrication system. If during start up, differential pressure fails to reach the set value, or if during operation differential pressure falls below the set value, the control device breaks the circuit to compressor motor after an allowable time delay. Once the circuit is broken, it has to be reset manually by pressing the reset knob.

**Thermostats Type :** MP61, used to control temperature is refrigerated spaces.

The sensing bulb exposed to the refrigerated space, makes the circuit to compressor motor when the temperature exceeds a preset value and breaks the circuit when the temperature has dropped to another preset value.



## GENERAL SPECIFICATION

Enclosure	Treated Mild Steel
Enclosure Protection	IP:33, IS:13947 (Part1),1993
Sensing Element	Phosphor Bronze Bellows (SS Bellows for $NH_3$ application)
Electrical Rating	Resistive : 10A, 110-380V AC Inductive : 6A, 110-380V AC, 0.2A, 250V DC – Full Load 36A, 110-380V AC, – Locked Rotor
<b>Electrical Input</b>	
Time Delay Relay	MP 55 / 55A : 220V AC MP 55X : 110V DC
Cable Entry	Suitable for 6 to 14mm dia cable
Ambient Temp.	(-)40°C to 60°C
Mounting	Surface / Panel



# MP SERIES TECHNICAL DATA

## Pressure

Type	Model	Code No.	Reset	Refrigerant	Pressure Range		Differential		Max Pressure (atmg)	Function on Pressure Increase	Connection Size	
					Low Starting	High Stopping (atmg)	Low Pressure (atm)	High Pressure (atm)				
Low Pressure Control	MP-1	060-0142	Auto	R12, R22, R40	30 cm Hg to 7 atmg	---	0.6 to 6	---	16	Starts	1/4" flare	
	MP-1A	060-0144	Auto	R717 (NH <sub>3</sub> )							Steel Capillary tube	
	MP-1R	060-0143	Manual	R12, R22, R40			0.6 (Fixed)	---			---	1/4" flare
	MP-1AR	060-0145	Manual	R717 (NH <sub>3</sub> )								Steel Capillary tube
High Pressure Control	MP-5	060-0147	Auto	R12, R22, R40	---	---	6 to 30	3 to 8	32	Stops	1/4" flare	
	MP-5A	060-0106	Auto	R717 (NH <sub>3</sub> )							6 to 22	2 to 8
	MP-5R	060-0148	Manual	R12, R22, R40			6 to 30	3 (Fixed)			1/4" flare	
	MP-5AR	060-0108	Manual	R717 (NH <sub>3</sub> )			6 to 22	2 (Fixed)			Steel Capillary tube	
Combined High and Low Control	MP-15	060-0150	Auto	R12, R22, R40	30 cm Hg to 7 atmg	---	8 to 30	4 (Fixed)	16 for Low Pressure side 32 for High Pressure Side	Low Pressure Starts High Pressure Stops	1/4" flare	
	MP-15A	060-0153	Auto	R717 (NH <sub>3</sub> )							8 to 22	3 (Fixed)
	MP-15R	060-0151	Manual	R12, R22, R40			8 to 30	4 (Fixed)			1/4" flare	
	MP-15AR	060-0154	Manual	R717 (NH <sub>3</sub> )			8 to 22	3 (Fixed)			Steel Capillary tube	

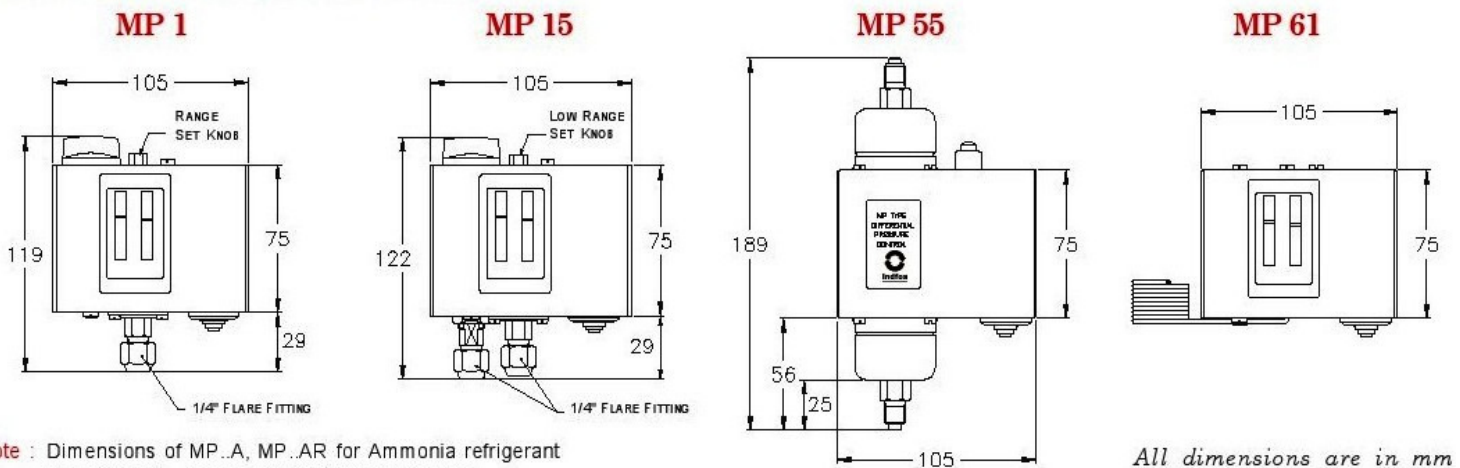
## Differential Pressure

Type	Model	Code No.	Reset	Refrigerant	DP Range (atm)	Diff. (atm)	Max Pressure (atmg)	Time Delay	Connection Size
Differential Pressure Control	MP-55	060-B9424	Manual	R12, R22, R40	0.3 to 4.5	0.2 (Fixed)	22	60 Sec.	1/4" flare
	MP-55X	060-B8277							3/8" BSPM
	MP-55A	060-B9433		R717 (NH <sub>3</sub> )					

## Temperature

Type	Model	Capillary Length (Meters)	Reset	Temp. Range °C	Differential °C	Max Temp °C
Temperature Control	MP-61 (2)	2.0	Auto	(-) 18 to (+) 13	3.6 at min range 2 to 13 max range	150°C
	MP-61 (5.4)	5.4				

## MOUNTING DIMENSIONS



Note : Dimensions of MP..A, MP..AR for Ammonia refrigerant are different. Please ask factory for drawing.

This is not a contractual document. Prior notification of changes in specifications is impracticable due to continuous improvement