

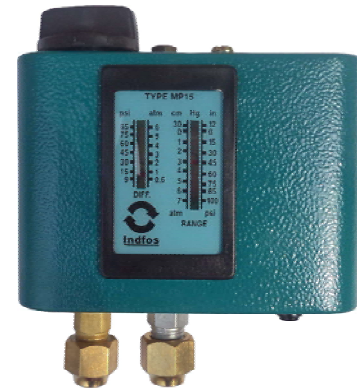


# Pressure / Differential & Temperature Controls Model MP

Switzer data sheet MP-00

## Applications

- Compressors
- Driers
- HVAC
- Cold Storage
- Chillers



MODEL MP 15

## Special Features

- Wide Adjustable Range
- In-built Sturdy Mechanism
- Auto / Manual Reset
- Hi - Lo option

## Description

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 mildsteel casting. All parts are rust proofed and designed for long life. Starting and stopping pressures can be set independently, and the device has a clearly readable pressure range scale.



MODEL MP 55

## TYPES

**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 present 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, and 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 Specifications

### Enclosure

Powder painted Mild Steel

### Enclosure Protection

IP:33, IS:13947 (Part1),1993

### Sensing Element

Phosphor Bronze Bellows  
(SS Bellows IS:110V AC 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

### Cable Entry

Suitable for 6 to 14 mm dia cable

### Ambient Temperature

(-) $40^{\circ}C$  to  $60^{\circ}C$

### Mounting

Surface / Panel

# Type MP Controls 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)	---					
	MP-1AR	060-0145	Manual	R717 (NH <sub>3</sub> )							Steel Capillary tube		
High Pressure Control	MP-5	060-0147	Auto	R12, R22, R40	---	---	---	---	32	Stops	1/4" flare		
	MP-5A	060-0106	Auto	R717 (NH <sub>3</sub> )							6 to 30	3 to 8	Steel Capillary tube
	MP-5R	060-0148	Manual	R12, R22, R40							6 to 22	2 to 8	1/4" flare
	MP-5AR	060-0108	Manual	R717 (NH <sub>3</sub> )							6 to 30	3 (Fixed)	Steel Capillary tube
Combined High and Low Control	MP-15	060-0150	Auto	R12, R22, R40	30 cm Hg to 7 atmg	---	0.6 to 6	---	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 30	4 (Fixed)	Steel Capillary tube
	MP-15R	060-0151	Manual	R12, R22, R40							8 to 22	3 (Fixed)	1/4" flare
	MP-15AR	060-0154	Manual	R717 (NH <sub>3</sub> )							8 to 30	4 (Fixed)	Steel Capillary tube
											8 to 22	3 (Fixed)	

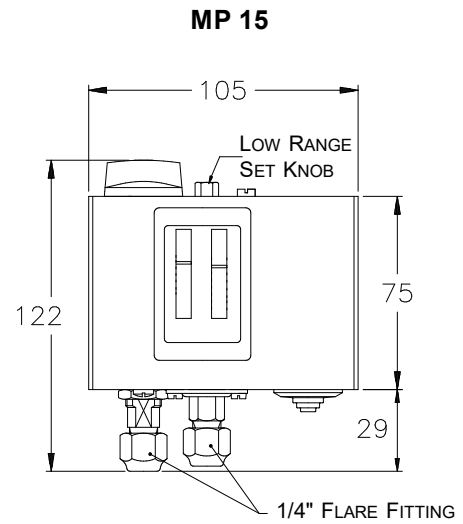
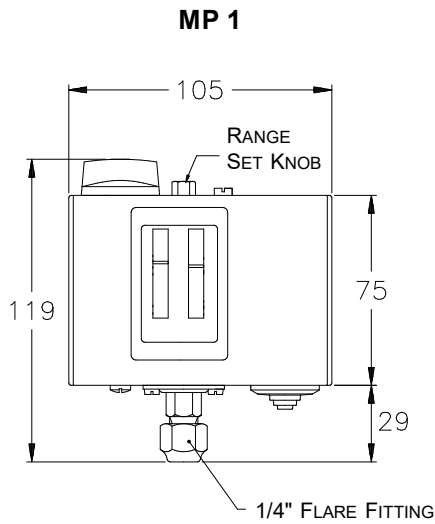
## Differential Pressure

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							Steel Capillary tube
	MP-55A	060-B9433		R717 (NH <sub>3</sub> )					

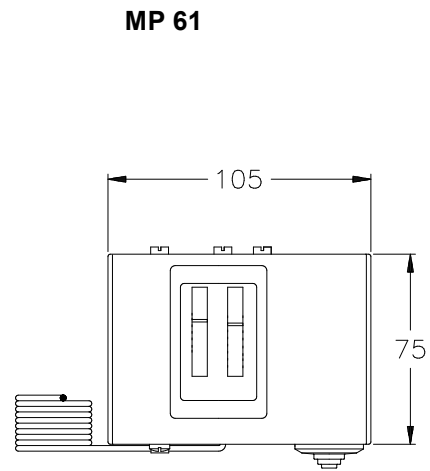
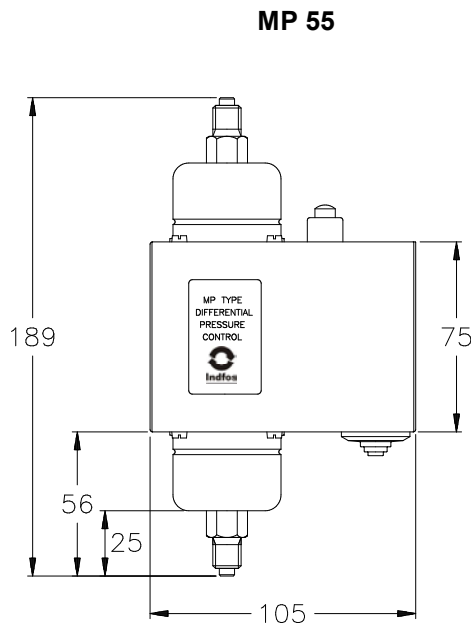
## Temperature

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	2.6 at min range 1.4 to 13 max range	150°C
	MP-61 (5.4)	5.4				
	MP-79 (2)	2.0		55 to 105	3.5 to 20	

# Mounting Dimensions



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



*All dimensions are in mm*

The specifications given in this document represent the state of engineering at the time of publishing. We reserve the right to make modifications to the specifications and materials.



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