



techsystem

automatyka klimatyzacja wentylacja

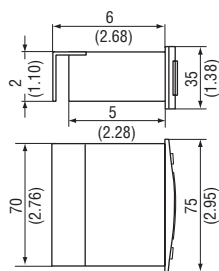
▸ zapoznaj się z naszą ofertą

Refrigeration Field Controllers

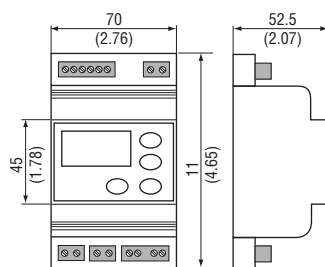
MS Electronic Controls for general purpose and multi stages controls (1/4)



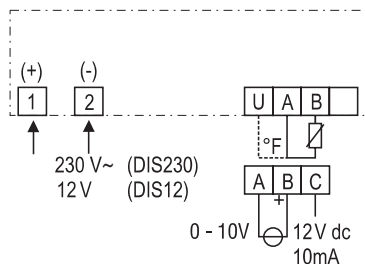
MS Series



Panel Model
Dimensions in mm (inches)



DIN Rail Model
Dimensions in mm (inches)



DISxx Wiring

Description

This range of versatile controls is intended for single or multistage (2 or 4 stages) applications such as heating, cooling but also humidity or pressure depending on the input type.

This range incorporates all control functions as required by modern applications and it exists in both panel mount and DIN rail enclosures. Particular attention has been given to its style in order to better suit your machine design.

This complete range of microprocessor based controls offers innovative features and "state of the art" technology.

Features

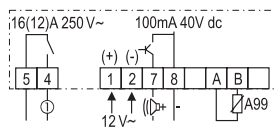
- Attractive Panel mount and DIN rail mount enclosure
- Up to 4 relays in panel mount enclosure
- 230 Volt power supply models available
- Accept A99 and 0-10 Volts sensor signal depending on models
- Power supply to sensors on 0-10 Volts models available from controller
- Accurate and interchangeable IP 68 sensor
- Wide range of enclosures for sensors available
- Keyboard lock
- SMD technology

MS Display - Selection Table

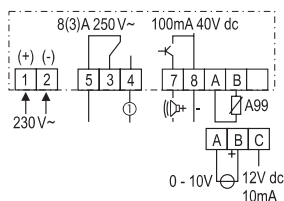
Range (°C)	Power Supply	Enclosure	Input	Protection Class	Additional Features	Ordering Codes
-40 to +70	12 VAC/DC	Panel	A99 sensor (incl.)	Overall IP20 Front IP54	Accuracy: ±1 °C Power Consumption: 1.5 VA 50/60 Hz	DIS12T-1C
	230 VAC					DIS230T-1C
0 to +100	12 VAC		0-10 V from humidity sensor (not Incl.)			DIS12V-1C
	230 VAC					DIS230V-1C

MS1 One-stage Control - Selection Table

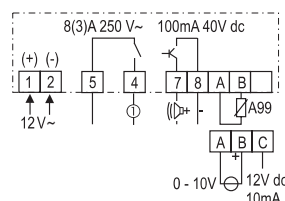
Range (°C)	Power Supply	Enclosure	Input	Output Rating 250 VAC	Alarm Output	Protection Class	Additional Features	Ordering Codes
-40 to +70	12 VAC/DC	Panel	A99 sensor (incl.)	SPST 8(3)A	Open Collector 40 VDC/100 mA	Overall IP20 Front IP54	Accuracy: ±1 °C Power Consumption: 2 VA 50/60 Hz	MS1PM12RT-1C
	230 VAC			SPDT 8(3)A				MS1PM230T-1C
	12 VAC			SPST 16(12)A		IP20		MS21PM12RT-1C
	230 VAC			SPST 8(3)A				MS1DR230T-1C
-40 to +100	12 VAC	DIN rail	0-10 V	SPST 8(3)A	Overall IP20 Front IP54	IP20	MS1PM12RV-1C	
	230 VAC			SPDT 8(3)A			MS1PM230V-1C	
	230 VAC			SPST 8(3)A			MS1DR230V-1C	



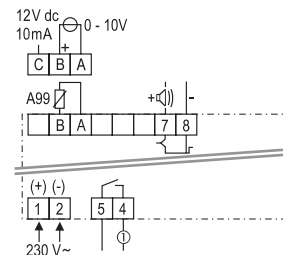
MS1PM12RT-1C / MS1PM12RV-1C
Wiring



MS1PM230T-1C / MS1PM230V-1C
Wiring



MS21PM12RT-1C
Wiring



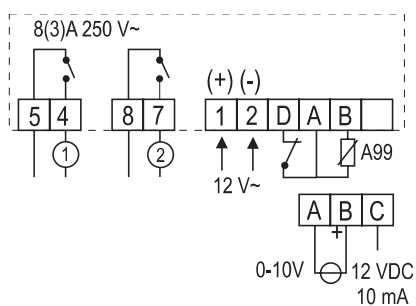
MS1DR230T-1C / MS1DR230V-1C
Wiring

Refrigeration Field Controllers

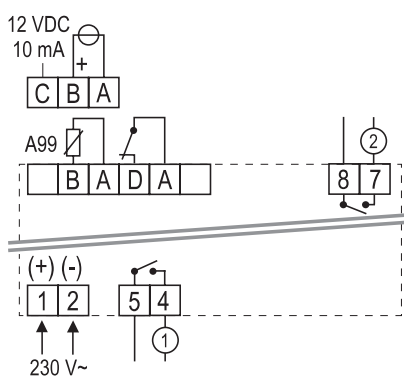
MS Electronic Controls for general purpose and multi stages controls (2/4)

MS2 Two-stage Control - Selection Table

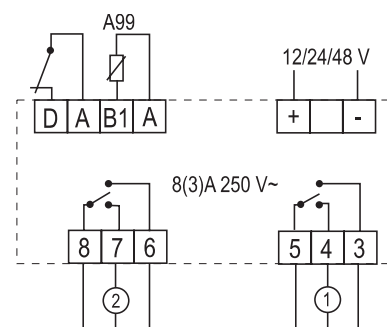
Range (°C)	Power Supply	Enclosure	Input	Output Rating 250 VAC		Alarm Output	Protection Class	Additional Features	Ordering Codes
				Stage 1	Stage 2				
-40 to +70	12 VAC/DC	Panel	A99 sensor (incl.)	SPST 8(3)A	SPST 8(3)A	40 VDC / 100 mA Open Collectors	Overall IP20 Front IP54	Accuracy: ±1 °C Power Consumption: 2 VA 50/60 Hz	MS2PM12RT-1C
	230 VAC	DIN rail		SPST 8(3)A	SPST 8(3)A		IP20		MS2DR230T-1C
-40 to +100	12 VAC	Panel	0-10 V	SPST 8(3)A	SPST 8(3)A		Overall IP20 Front IP54		MS2PM12RV-1C
	230 VAC	DIN rail		SPST 8(3)A	SPST 8(3)A		IP20		MS2DR230V-1C
-40 to +70	12-24 VAC/DC 48 VDC	DIN rail	A99 sensor (incl.)	SPDT 8(3)A	SPDT 8(3)A				MS2DR48DT-1C



**MR2PM12RT-1C / MS2PM12RV-1C
Wiring**



**MS2DR230T-1C / MS2DR230V-1C
Wiring**



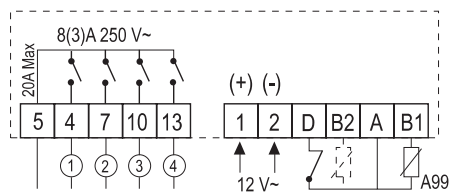
**MS2DR48DT-1C
Wiring**

Refrigeration Field Controllers

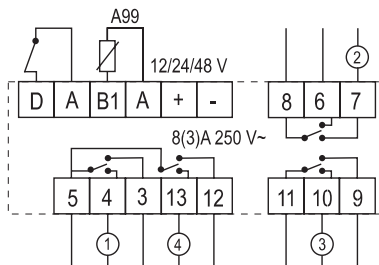
MS Electronic Controls for general purpose and multi stages controls (3/4)

MS4 Four-stage Control Selection Table

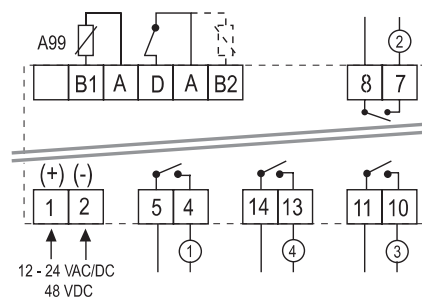
Range (°C)	Power Supply	Enclosure	Input	Output Rating 250 VAC 8(3)A			Open Collectors	Protection Class	Additional Features	Ordering Codes
				Stage 1	Stage 2	Stage 3 and 4				
-40 to +70	12 VAC/DC	Panel	A99 sensor (incl.)	SPST	SPST	SPST	40 VDC / 100 mA	Overall IP20 Front IP54	Accuracy: ±1 °C Power Consumption: 2 VA 50/60 Hz	MS4PM12RT-1C
	230 VAC	DIN rail		SPST	SPST	SPST				MS4DR230T-1C
	12-24 VAC/DC 48 VDC	Panel		SPDT	SPDT	SPDT		IP20		MS4DR48T-1C



MS4PM12RT-1C Wiring



MS4DR230T-1C Wiring



MS4DR48T-1C Wiring

Refrigeration Field Controllers

MS Electronic Controls for general purpose and multi stages controls (4/4)

Parameters Descriptions

Display Code	Parameter	Setting Range	Default	MS1 MSx1	MS2	MS4
Temperature control parameters						
H1	Hysteresis (HY)	1 to 9 K	2	●	●	●
S2	Setpoint 2	Direct/Reverse = 1 to 40 units Deadband = 2 to 40 units Indip. Setpoint = Low to high limit	3		●	●
H2	Hysteresis (HY)	1 to 9 K	-40		●	●
S3	Setpoint 3	1 to 40 units	-40			●
H3	Hysteresis (HY)	1 to 9 K	-40			●
S4	Setpoint 4	1 to 40 units	-40			●
H4	Hysteresis (HY)	1 to 9 K	-40			●
LL	Lower setpoint limit (LL)	-40 °C to higher limit	-40	●	●	●
HL	Higher setpoint limit (HL)	Lower limit to 125 units	70	●	●	●
CC	Anti short cycling cooling (CC)	0 to 9 min	2	●	●	●
CH	Anti short cycling heating (CH)	0 to 99 min	60	●	●	●
rt	Soft start	0 to 99 min / units	3	●	●	●
Alarm parameters						
AH	High. temperature alarm	0 to 50 units related to setpoint	10	●	●	●
AL	Low temperature alarm	-50 to 0 units related to setpoint	-10	●	●	●
Ad	Alarm differential	1 to 9 units	1	●	●	●
At	Alarm time delay	0 to 99 min	30	●	●	●
Temperature parameters						
Lc	Non compensated band	0 to 20 K	OF			●
Uc	Heating compensation	0 to 6 K/K	0			●
nc	Cooling compensation	0 to 6 K/K	20			●
Other parameters						
So	Sensor offset	-20 to +20 units	0	●	●	●
Un	Temperature units	0 = Celsius degrees 1 = Fahrenheit degrees	0	●	●	●
PU	Display updating time delay	1 to 99 sec	7	●	●	●
iF	Digital input function	0 = Not used 1 = Shut off and alarm signalling 2 = Stand by mode 3 = Remote switch off	6		●	●
Sb	Stand-by bias	0 to 20 units	40		●	●
Id	Digital input time delay	0 to 99 sec	5		●	●
IS	Interstage delay	3 to 99 sec	20		●	●
Lr	Low range analog input 1	-40 to high range	20	●	●	
Hr	High range analog input 1	Low range to 100	20	●	●	

Notes: * When there are 2 setpoints (MS2 or MS4 is configured for independent setpoint mode), the low alarm is linked to the lowest setpoint and the high alarm is linked to the highest setpoint.