

MAER100 series

AIR UNIT (ELECTRO – PNEUMATIC REGULATOR)



User manual



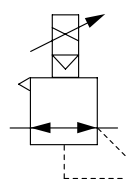
Caution for safety
(Read before installing)



Feature

- Stepless control of air pressure proportional to an electrical signal.
- Simplify complex pipeline for controlling different pressure.
- Achieve high precision pressure control with microcomputer PID.
- Maximum flow rate 350 L/min (Supply pressure 1.0 MPa, Set pressure 0.6 MPa).
- Comply with IP65 and CE certification.

Symbol



Specification

Model	MAER100		
Pressure range	1K	5K	9K
Bore No.	6A, 8A		
Port size	1/8, 1/4		
Medium	Air		
Proof pressure	0.3 MPa	1.5 MPa	
Ambient temperature	+5~+50°C (No condensation)		
Min. supply pressure	Set pressure +0.1 MPa		
Max. supply pressure	0.2 MPa	0.7 MPa	1 MPa
Setting pressure range (*1)	0.005~0.1 MPa	0.005~0.5 MPa	0.009~0.9 MPa
Power supply	Connector	M12 plug, 4-pin, A-coded	
	Voltage	DC24V±10%	
	Current	DC24V: 80mA or less	
Signal input	Current type	DC4~20 mA	
	Voltage type	DC0~5V, DC0~10V	
	Preset input (*2)	4 points	
Input impedance	Current type	≤ 400Ω	
	Voltage type	Approx. ≤ 50kΩ	
	Preset type	Approx. ≤ 1000kΩ	
Signal output (Monitor output)	Analog output	Voltage type DC1~5V (Load impedance 1kΩ or above) Output accuracy ±6% F.S. or less Current type DC4~20mA (Load impedance 750Ω or less) Output accuracy ±6% F.S. or less	
	Switch output	NPN,PNP: Max. 24V, 160mA	
Linearity	Within ±1% (F.S.)		
Hysteresis	Within 0.5% (F.S.)		
Repeatability	Within ±0.5% (F.S.)		
Sensitivity	Within 0.2% (F.S.)		
Temperature characteristics	Within ±0.2% (F.S.)/°C		
Output pressure display (*3)	Precision	±2% F.S. ±1 digit	
	Min. unit	MPa:0.001, kgf/cm ² :0.01, bar:0.01, psi:0.1, kPa:1	
Enclosure	Equivalent to IP65		
Accessories	Cable with connector: M124A-**		
Weight	Main: 252 g; Bracket: Approx. 86g(B1), 80g(B2); Cable with connector: Approx. 55g(1m), 130g(3m)		

*1. Minimum setting pressure is equal to 1% F.S..

*2. For safety reasons, it is recommended that one of the preset pressures be set to 0 MPa.

*3. Linearity setting and preset pressure setting value both are set by the minimum unit of the output pressure display.

*4. The above characteristics are confined to no flow in the pipeline. When air is consumed on the output side, pressure may become unstable.

*5. The above characteristics apply for a control pressure of 10% to 90% when power voltage is 24 VDC, ambient temperature is 25±3°C, no-loading and working pressure is maximum control pressure.

MAER100 Order example & Interface pin



AIR UNIT (ELECTRO – PNEUMATIC REGULATOR)

mindman

Order example

MAER100 – 8A – 9K – 1 1 1 – B1 S1 – □

MODEL

PORT SIZE

6A: 1/8
8A: 1/4

PRESSURE RANGE

1K: 0.1 MPa (*)
5K: 0.5 MPa
9K: 0.9 MPa

BRACKET

Blank: Without
B1: L type
B2: Flat type

CABLE CONNECTOR

Blank: Without
S1: Straight 1m
S3: Straight 3m
L1: Right angle 1m
L3: Right angle 3m

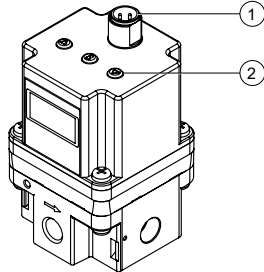
PORT THREAD

Blank: Rc thread
G: G thread
NPT: NPT thread

SIGNAL INPUT	SIGNAL OUTPUT	PRESSURE DISPLAY UNIT
1: Current DC4~20mA 2: Voltage DC0~10V 3: Voltage DC0~5V (*) 40: Preset input (*)	1: Analog output DC1~5V 2: Switch output NPN 3: Switch output PNP 4: Analog output DC4~20mA (Source type)	1: MPa 2: kgf/cm ² 3: bar 4: psi 5: kPa
	-	

* Made to order.

Exterior



No.	Item	Description
1	Power connector	M12 plug, 4-pin, A-coded (male)
2	Operation button	Mode settings

Interface pin

① Signal input: Current / voltage type

Fig	Pin	Signal
	1	24V
	2	Signal input
	3	0V GND
	4	Monitoring output

① Signal input: Preset input type

Fig	Pin	Signal
	1	24V
	2	Signal input 1
	3	0V GND
	4	Signal input 2

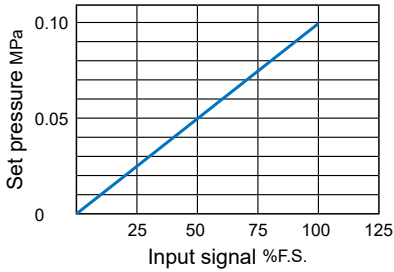
MAER100 Capacity

AIR UNIT (ELECTRO – PNEUMATIC REGULATOR)

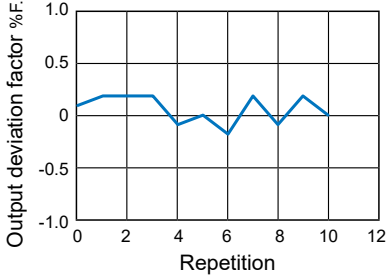


MAER100-1K

Linearity

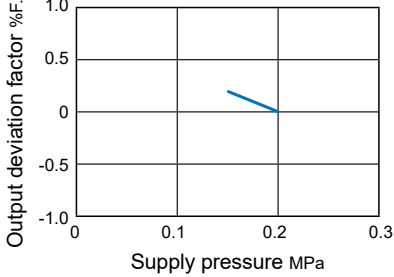


Repeatability



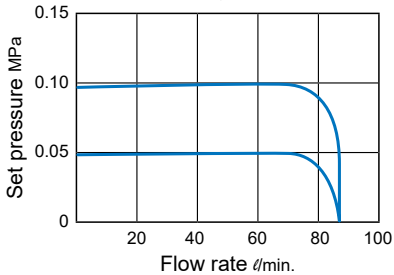
Pressure characteristics

Set pressure 0.05 MPa



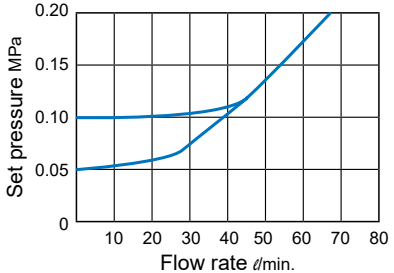
Flow rate characteristics

Supply pressure 0.2 MPa



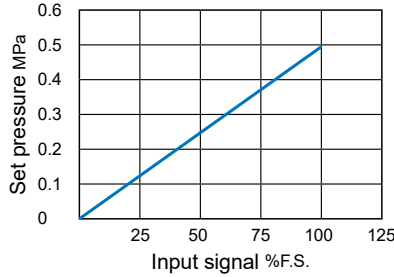
Relief flow characteristics

Back pressure 0.2 MPa

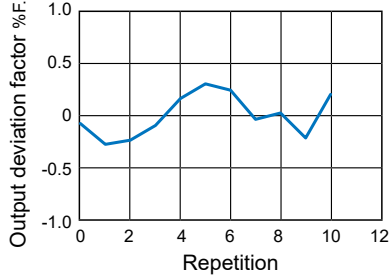


MAER100-5K

Linearity

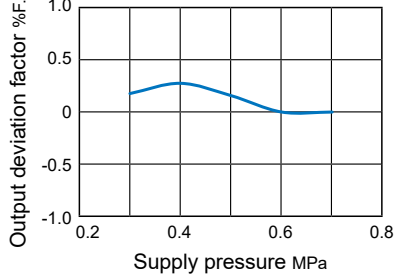


Repeatability



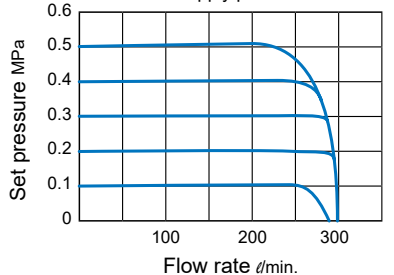
Pressure characteristics

Set pressure 0.2 MPa



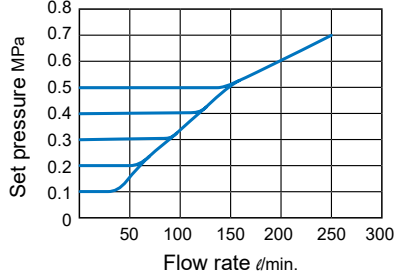
Flow rate characteristics

Supply pressure 0.7 MPa



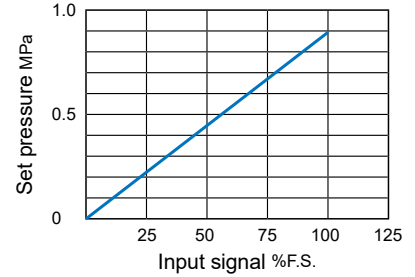
Relief flow characteristics

Back pressure 0.7 MPa

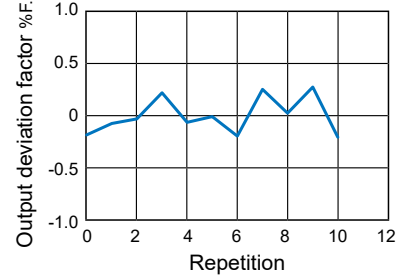


MAER100-9K

Linearity

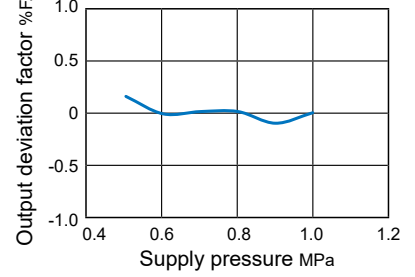


Repeatability



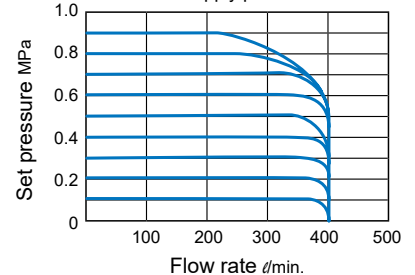
Pressure characteristics

Set pressure 0.4 MPa



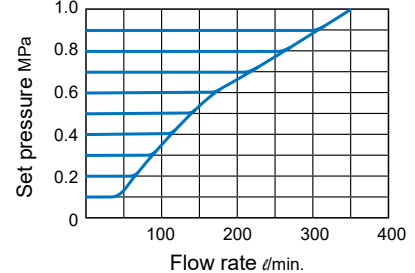
Flow rate characteristics

Supply pressure 1.0 MPa



Relief flow characteristics

Back pressure 1.0 MPa



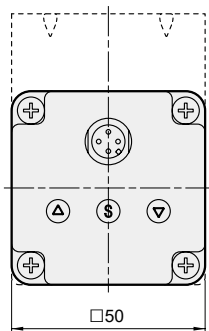
MAER100 Dimensions

AIR UNIT (ELECTRO – PNEUMATIC REGULATOR)



MAER100-* -B1

L type bracket



MAER100-* -B2

Flat type bracket

