

MAER310 series

AIR UNIT (ELECTRO – PNEUMATIC REGULATOR)



Features



RS-232 manual



RS-485 manual



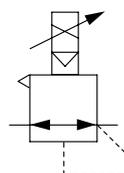
Caution for safety
(Read before installing)



Feature

- Stepless control of air pressure proportional to an electrical signal.
- Simplify complex pipeline for controlling different pressure.
- MAER310 can be assembled with MA**401/403 series.
- Achieve high precision pressure control with microcomputer PID.
- Maximum flow rate 4000 L/min (Supply pressure 1.0 MPa, Set pressure 0.6 MPa).
- Comply with IP65 and CE certification.

Symbol



Specification

Model		MAER310		
		1K	5K	9K
Pressure range		1K	5K	9K
Bore No.		8A, 10A, 15A		
Port size		1/4, 3/8, 1/2		
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: 180mA or less		
Precision	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 (*2)	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		IP65		
Accessories of cable with connector		Power: M124A-** , Communication: M125A-**		
Weight	Main	740 g		
	Accessories	Bracket: Approx. 86g(B1) , 80g(B2); Power cable with connector: Approx. 130g(3m) Communication cable with connector: Approx. 140g(3m)		

Communication type

Protocol	RS-232	RS-485
Input connector	M12 plug, 5-pin, A-coded	M12 plug, 5-pin, A-coded
Address	1	1~248
Comm. speed	9.6k / 19.2k / 38.4k bps	9.6k / 19.2k / 38.4k bps
Comm. interface	Modbus ASCII	Modbus RTU

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

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

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

MAER310 Order example & Interface pin



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Order example

MAER310 – 8A – 9K – 10 1 – B1 S3 CS – □

MODEL

PORT SIZE

8A: 1/4
10A: 3/8
15A: 1/2

PRESSURE RANGE

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

* Made to order.

PRESSURE DISPLAY UNIT

1: MPa
2: kgf/cm²
3: bar
4: psi
5: kPa

POWER CABLE

Blank: Without
S3: Straight 3m
L3: Right angle 3m

PORT THREAD

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

COMMUNICATION MODEL

10: RS-232
20: RS-485

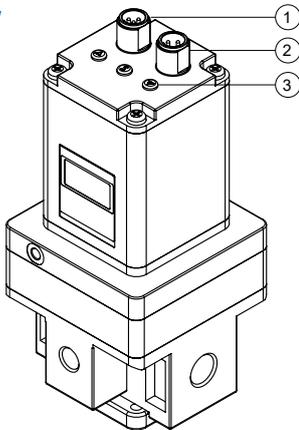
BRACKET

Blank: Without
B1: L type
B2: Flat type

COMMUNICATION CABLE

Blank: Without
CS: Straight 3m
CL: Right angle 3m

Exterior



No.	Item	Description
1	Power connector	M12 plug, 4-pin, A-coded (male)
2	Communication connector	M12 plug, 5-pin, A-coded (male)
3	Operation button	Mode settings

Interface pin

RS-232

① Power interface		
Fig	Pin	Signal
	1	24V
	2	–
	3	0V GND
	4	–

② Communication connector		
Fig	Pin	Signal
	1	–
	2	TxD
	3	RxD
	4	GND
	5	–

RS-485

① Power interface		
Fig	Pin	Signal
	1	24V
	2	–
	3	0V GND
	4	–

② Communication connector		
Fig	Pin	Signal
	1	–
	2	B(-)
	3	A(+)
	4	GND
	5	–

MAER310 Capacity

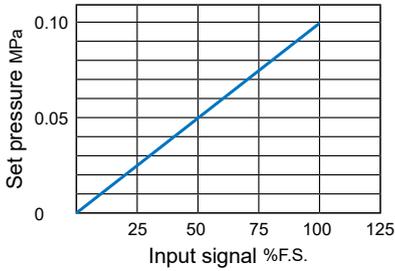
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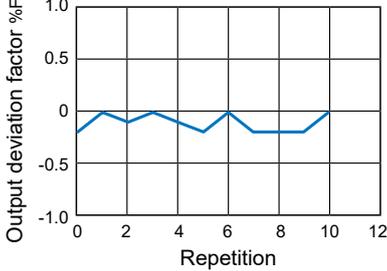
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MAER310-1K

Linearity

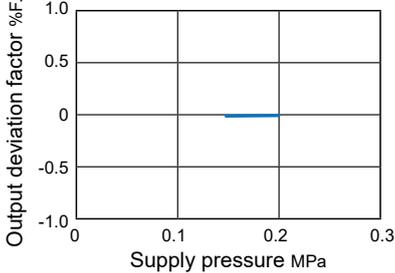


Repeatability



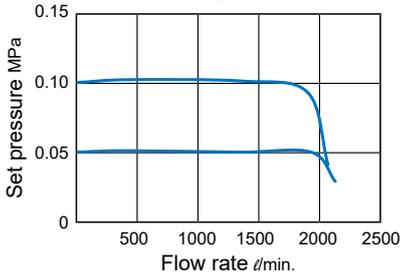
Pressure characteristics

Set pressure 0.05 MPa



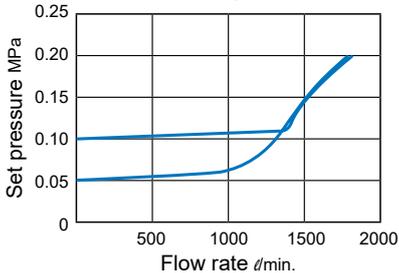
Flow rate characteristics

Supply pressure 0.2 MPa



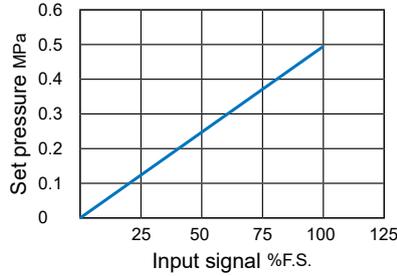
Relief flow characteristics

Back pressure 0.2 MPa

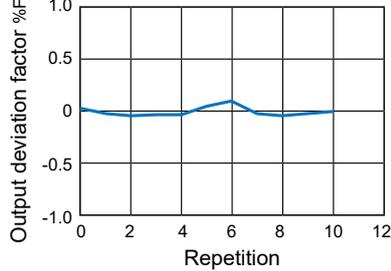


MAER310-5K

Linearity

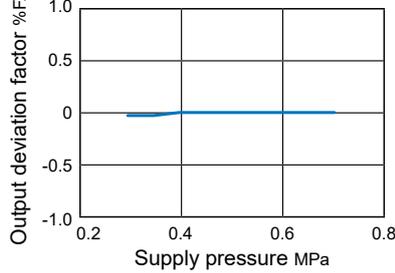


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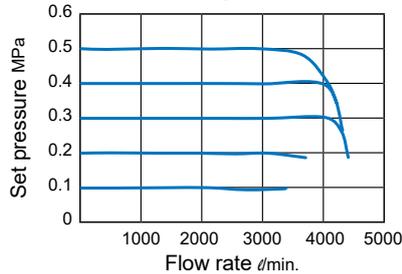
Pressure characteristics

Set pressure 0.2 MPa



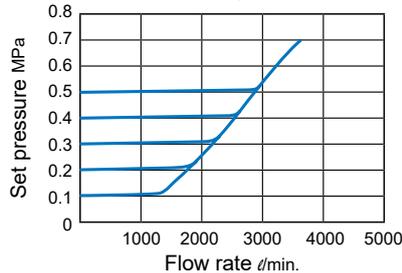
Flow rate characteristics

Supply pressure 0.7 MPa



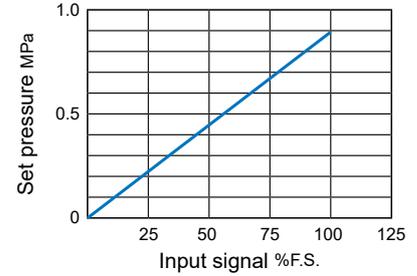
Relief flow characteristics

Back pressure 0.7 MPa

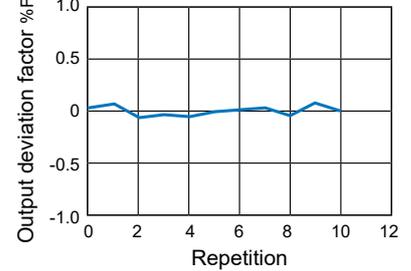


MAER310-9K

Linearity

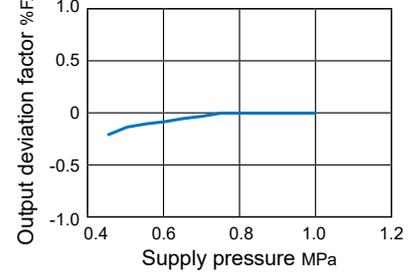


Repeatability



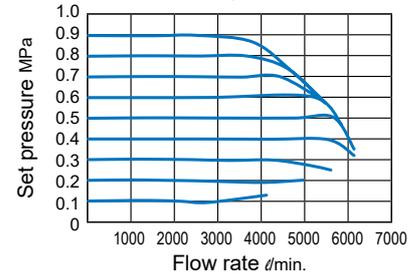
Pressure characteristics

Set pressure 0.4 MPa



Flow rate characteristics

Supply pressure 1.0 MPa



Relief flow characteristics

Back pressure 1.0 MPa

