

RT-MRPD1-AS*-2X

Modular proportional amplifier with electrical position feedback, single electromagnet.
Design number: 2X series
Power supply range: 19~35VDC
Command types: $\pm 10V$, 4~20mA
(confirmed before leaving the factory)
Types of control valves: DLHZO or DLKZOR



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Features

- applicable to control the Atos DLHZO and DLKZOR series proportional - servo valves.
- The CPU adopts a powerful 32-bit processor
- The command input is $\pm 10V$ or 4 - 20mA
- Monitoring of the actual value of spool position
- Enable input
- The fault diagnosis function can give prompts for abnormal conditions such as broken wires of electromagnets and broken wires of displacement sensor cables.
- The power supply has a reverse polarity protection function.

Ordering Model

RT-MRPD	1	-	AS6	-	2X	/	A1
01	02		03		04		05

01	RT-MRPD	Modular proportional amplifier
02	1	Drive single-electromagnet proportional valve
03	AS6	Control the DLHZO proportional valve
	AS10	Control the DLKZOR proportional valve
04	2X	The design number is of 2X series
05	A1	The command input of 0~10V
	F1	The command input of 4~20mA

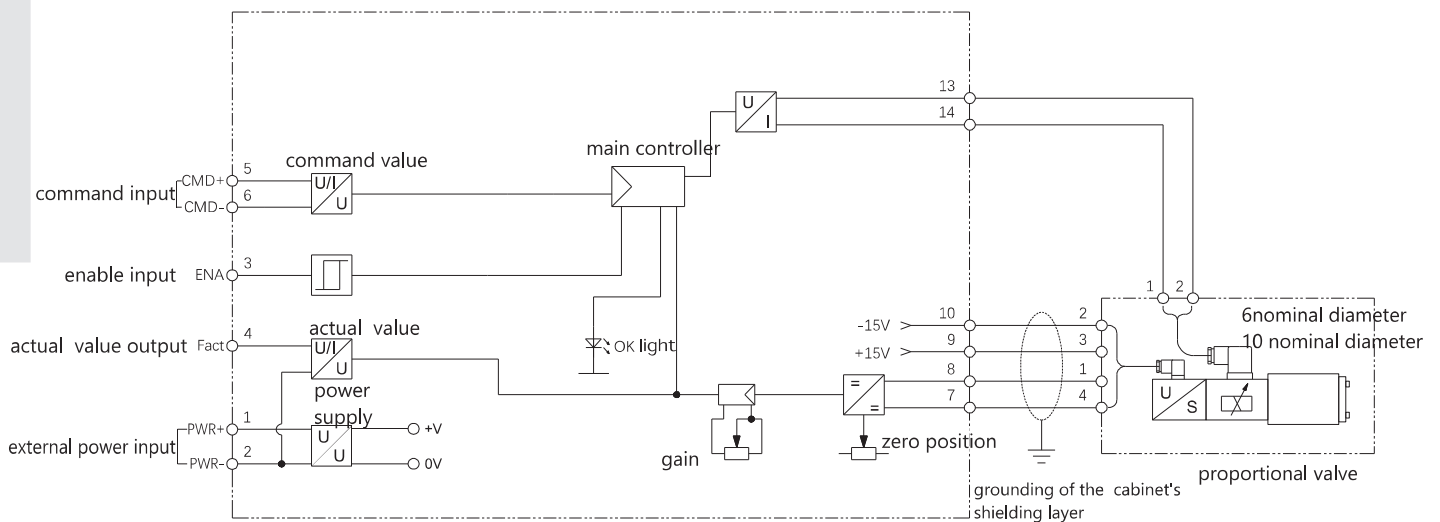
MRPD1-AS

Technical Data

Working Voltage	19~35 VDC (commonly 24VDC)
Maximum Power Consumption	< 48VA
No-load Current	≤100mA (24V)
Differential Signal Input	0~10 V, input impedance ≥100KΩ 4~20 mA, input impedance =100Ω (Specify before delivery, not switchable on site)
Resolution	≤1 ‰
Nonlinearity	≤1 ‰
Output of Actual Position Value	0~10 V, load impedance ≥550KΩ 4~20 mA, load impedance <300Ω
Maximum Drive Current	3A
Ramp Time	10~5000 mS (settable)
Enable input	< 2V, The electromagnet output is normal and the OK light stays green all the time. 2V~UB, The electromagnet output is cut off and the OK light flashes green.
Operating Temperature Storage Temperature Operating and Storage Humidity	-20~60℃ -25~70℃ 0 %~90 %
Connection Type	Plug-in threaded fastening terminals

Principle Block Diagram

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Terminal Definition

Terminals		Function Descriptions
1	PWR+	External power input 24VDC
2	PWR-	
3	ENA	Enable input: When the voltage is greater than 2V, the electromagnet output is normal; when the voltage is less than 2V (or the terminal is left floating), the electromagnet output is cut off.
4	Fact ②	Actual position value With reference point being terminal No. 2 Type A1: ± 10 V, load impedance $\geq 550\text{K}\Omega$ Type F1: 4 - 20 mA, load impedance $< 300\Omega$
5	CMD+ ①	Analog command input Type A1: ± 10 V, with input impedance $\geq 100\text{K}\Omega$. Type F1: 4 - 20 mA, with input impedance = 100Ω
6	CMD-	
7	S-	Sensor signal ground (connected to sensor terminal 4)
8	S+	Sensor signal positive terminal $\pm 10\text{V}$ ((connected to sensor terminal 1))
9	P+	Sensor power supply $+15\text{V}$ ((connected to sensor terminal 3))
10	P-	Sensor power supply -15V ((connected to sensor terminal 2))
11	N.C.	Not connected
12	N.C.	
13	SOL+	Electromagne
14	SOL-	
15	N.C.	Not connected
16	N.C.	

① A positive input value applied to 5,6 (0 to +10V or 12 to 20mA) will cause the valve p port to connect to A port, B port to connect to T port. A negative input value applied to 5,6 (0 to -10V or 12 to 4mA) will cause the valve p port to connect to B port, A port to connect to T port.

② AA positive actual value measured at 4, 2 (0 to +10V or 12 to 20mA) indicates that the valve p port is connected to A port, B port to T port. A negative actual value measured at 4, 2 (0 to -10V or 12 to 4mA) indicates that the valve p port is connected to B port, A port to T port.

Display and Adjustment

Indicator light display

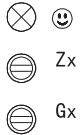
The status of the OK light	Descriptions
Green light always on	Normal
Green light flashing	Disabled
Red light always on	Position sensor broken

Potentiometer adjustment

Potentiometer name	Descriptions
Zx ①	Zero position adjustment of the sensor, adjust when the zero position of the valve deviates.
Gx ②	Sensor gain adjustment

① Zero position adjustment: After the valve has been in operation for a period of time, the zero position of the valve spool may shift due to factors such as vibration. You can adjust this potentiometer to readjust the zero position. Note that the amplitude of the on-site zero position adjustment should be as small as possible.

② Gain adjustment: It is applicable to the calibration of the maximum flow rate of the valve before it leaves the factory (which requires the cooperation of a flow test bench). It is not recommended that customers make adjustments on the equipment site.

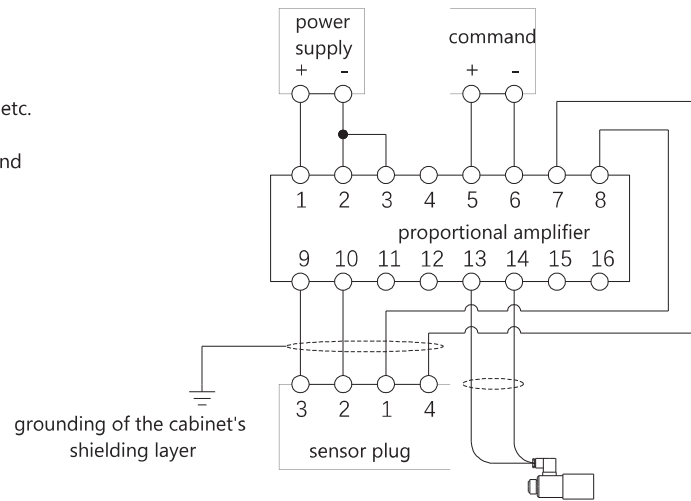
16	15	14	13
12	11	10	9
ReboTech			
			
RT-MRPD			
8	7	6	5
4		2	1

Wiring Examples

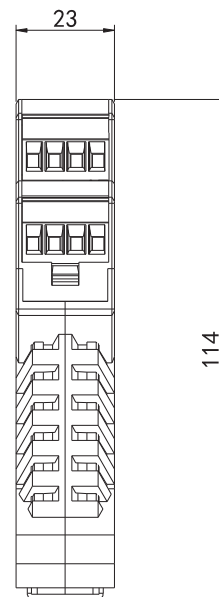
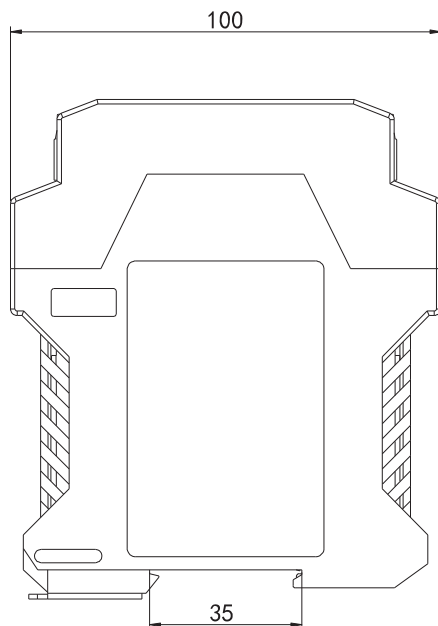
Example 1

Give an analog commands through PLC, CNC, acquisition card, etc.
The analog commands can be any signal of $\pm 10V, 4\sim 20mA$.

Note: The command type has been determined at the factory and cannot be changed on site.

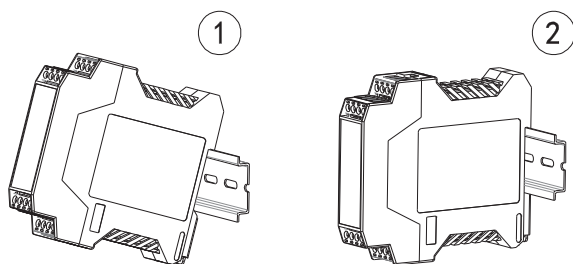


Overall Dimensions (Unit: mm)



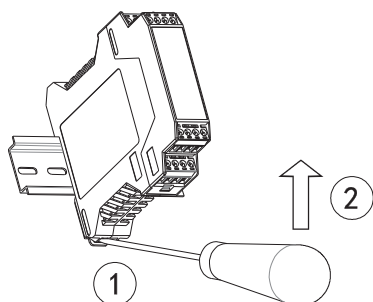
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Installation Guidance



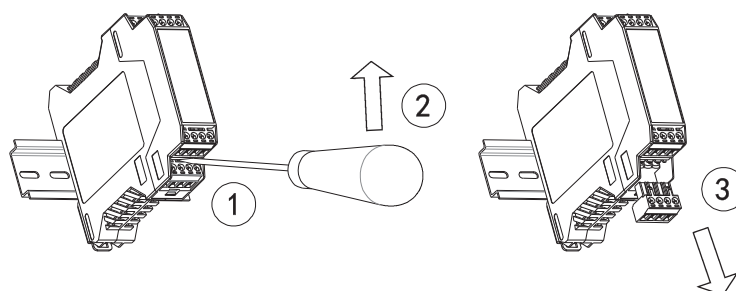
Amplifier Installation:

1. Clip the upper end of the back bayonet of the amplifier onto the guide rail
2. Press the lower front of the amplifier by hand until you hear a "click", meaning it's installed properly.



Amplifier Removal:

1. Insert a flathead screwdriver into the bottom latch.
2. Push the handle of the screwdriver in the direction shown in the illustration to remove the amplifier from the guide rail.



Terminal Disassembly:

1. Insert a flathead screwdriver into the gap between the terminal and the housing.
 2. Push the handle of the screwdriver in the direction shown in the illustration to separate the terminal from the socket.
 3. Pull out the terminal in the direction shown in the illustration.
- Instruction: If it is necessary to replace the amplifier on site, the terminals can be directly disassembled and then a new amplifier can be inserted. There is no need to repeatedly disassemble and assemble the wires. This effectively avoids amplifier failures caused by incorrect wiring.

Precautions

- The amplifier can only be plugged in or unplugged when the power is off!
 - When connecting to the electromagnet, do not use plugs with freewheeling diodes or LED displays!
 - When measuring the amplifier, instruments with $R_i > 100k$ must be used!
 - Use relays with gold contacts to switch the command values (low voltage, low current)!
 - When using external control, the maximum fluctuation of the control voltage should not exceed 10%.
 - The distance from antennas, wireless power sources and radar equipment must be greater than 1m.
 - Don't lay the electromagnet and the command value cables near the power cables!
 - For coil cables with a length within 50 m, wires with a wire diameter of 1.5 mm^2 are applicable. If longer cables are needed, please contact us.
- Suggestion: The connections of the electromagnet should also be shielded.
- The electrical signals generated by the amplifier (such as the reference voltage +10V) are not allowed to be used as functional signals related to equipment safety! Please refer to the European standard "BS EN 982:1996 Safety of machinery - Safety requirements for fluid power systems and their components - Hydraulic power transmission devices".