

RT-MRPD-5035M

Modular pump controller with electrical position feedback and double electromagnets
Power supply range: 19~35VDC
Command types: 0~10V
Controlled pump types: A4VSO or A4VSG



5035M

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Features

- It's applicable to control the electro - proportional variable piston pumps of A4VSO and A4VSG series.
- The CPU adopts a powerful 32-bit processor.
- Command input 0~10 V
- Two pulse - width modulation output ports
- Enable input
- Fault diagnosis function: It gives alerts for abnormal conditions such as under - voltage of the power supply and breakage of the swash - plate angle sensor cable.
- The power supply has a reverse polarity protection function.

Ordering Model

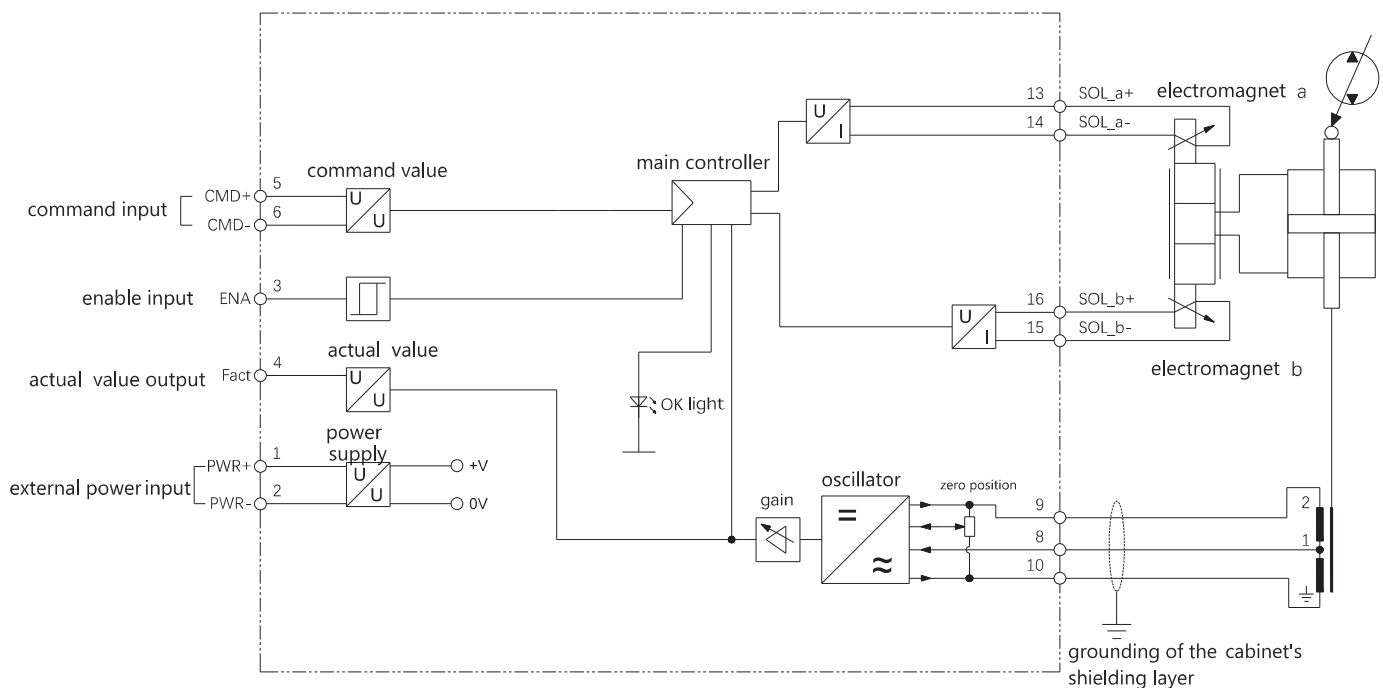
	RT-MRPD	-	5035M
	01		02
01	RT-MRPD	Modular proportional amplifier with electrical position feedback	
02	5035M	Control the electro - proportional variable piston pumps of the A4VSO and A4VSG series with tilt sensors.	

Technical Data

5035M

Working Voltage	19~35 VDC (commonly 24VDC)
Maximum Power Consumption	< 48VA
No-load Current	≤60mA (24V)
Differential Signal Input	0~10 V, input impedance ≥100KΩ, resolution <5mV
Output of Actual Position Value	0~10 V, load impedance ≥550KΩ
Maximum Drive Current	2.5A
Enable Input	0V<UE<1V: when the amplifier is operating, the green light is always on. 1V<UE<UB: when the amplifier is not working, the green light flashes.
Displacement sensor power supply	5VAC, 2.5KHz, I _{max} =30mA
Operating Temperature	-20~60°C
Storage Temperature	-25~70°C
Operating and Storage Humidity	0 %~90 %
Connection Type	Plug-in threaded fastening terminals

Principle Block Diagram



Terminal Definition

Terminals		Function Descriptions
1	PWR+	External power input, 24VDC
2	PWR-	
3	ENA	Enable input: 0V<UE<1V : when the amplifier is operating, the green light is always on. 1V<UE<UB: when the amplifier is not working, the green light flashes.
4	Fact	Actual position value with reference point being terminal No. 10 0~10 V, load impedance ≥ 550KΩ
5	CMD+	Analog command input 0~10 V, input impedance ≥ 100KΩ
6	CMD-	
7	N.C.	Not connected
8	S1	connected to sensor terminal 1
9	S2	connected to sensor terminal 2 ①
10	SGND	connected to sensor terminal $\perp$ ①
11	N.C.	Not connected
12	N.C.	
13	SOL_B+	Electromagnet B
14	SOL_B-	
15	SOL_A-	Electromagnet A
16	SOL_A+	

① Note: The current wiring is for the pump with clockwise rotation. After swapping the wiring of terminals 9 and 10, it will be for the pump with counter-clockwise rotation.

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	Sensor zero position adjustment
Gx ②	Sensor gain adjustment:

①Zero 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.

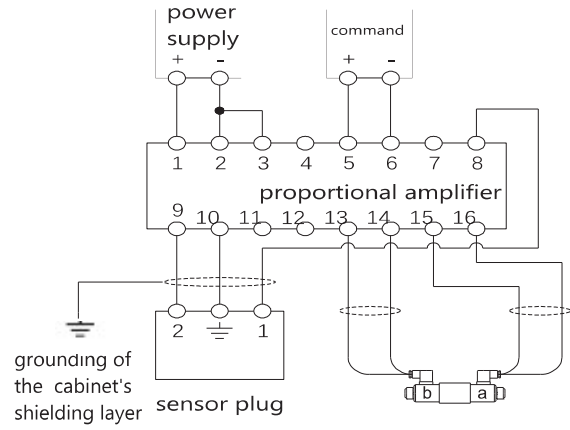
②Gain adjustment: It is applicable to the calibration of the maximum flow rate of the valve before it leaves the factory (which requires the cooperation of a flow test bench). It is not recommended that customers make adjustments on the equipment site

16	15	14	13
12	11	10	9
ReboTech			
 			
 Zx			
 Gx			
RT-MRPD			
8	7	6	5
4	3	2	1

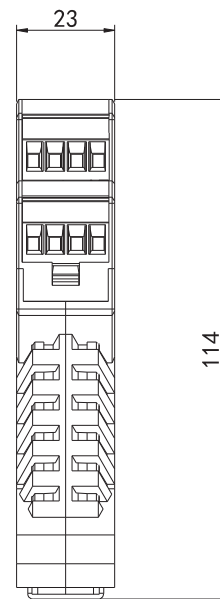
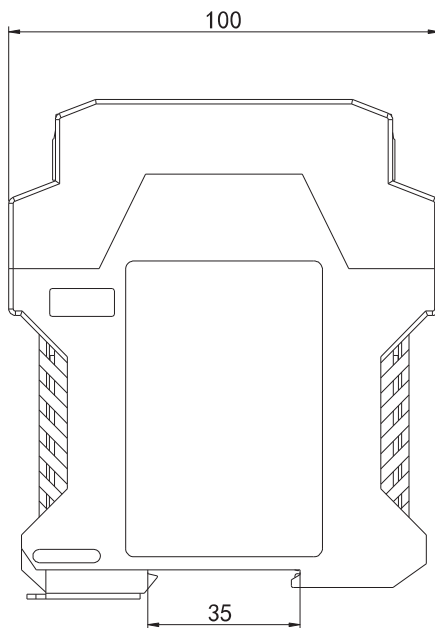
Example 1

Give an analog commands through PLC, CNC, acquisition card, etc.

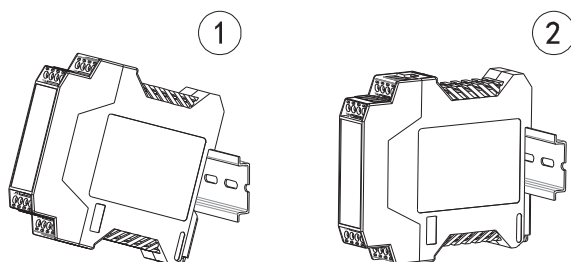
The analog commands can be any signal of 0~10V。



Overall Dimensions (Unit: mm)

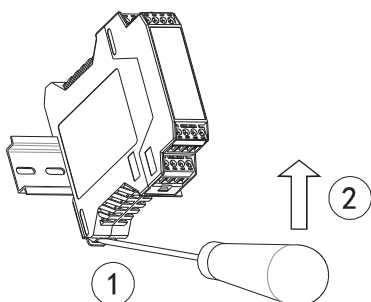


Installation Guidance



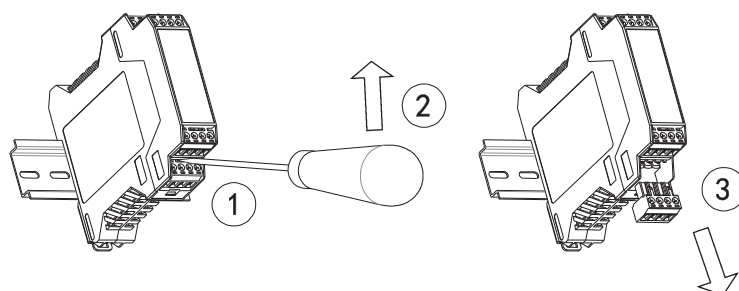
Amplifier Installation:

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 $R_i > 100k\Omega$ 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!