

# EZPJ External Vacuum Control Unit (fieldbus Type)



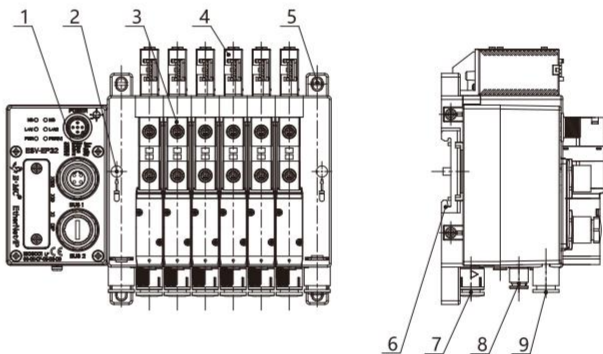
## EZPJ

### External vacuum control unit (fieldbus type)



#### Applications / Features

- Solenoid valve adopts fieldbus type communication control module, and the overall wiring of the product is more compact and beautiful. There are multiple types of fieldbus communication protocols available (PROFINET, EtherCAT, EtherNet/IP, DeviceNET, I/O Link).
- Centralized external vacuum source port, built-in vacuum control, breaking vacuum control, broken vacuum flow regulation, vacuum filtration, optional vacuum pressure gauge.
- Built-in vacuum filter element for easy and quick replacement.
- The combination of 35mm card rail installation and screw hole installation to meet different installation requirements.



1. Fieldbus module (Separate cable selection).
2. Guide rail fixing frame, tighten bolt holes.
3. External vacuum control unit (assembled).
4. Digital vacuum pressure gauge (optional).
5. Installation holes (4-4.5X6).
6. 35mm guide rail installation slot.
7. Vacuum adsorption end interface ( $\varnothing 6/\varnothing 8$ ).
8. Positive pressure air inlet ( $\varnothing 6$ ).
9. External vacuum source interface ( $2-\varnothing 8$ ).

#### How to order?

Series No. —  — Vacuum gauge specification — Vacuum diameter — Links — Communication Protocol

EZPJ:  
Fieldbus type external  
vacuum control unit

Code	Supple Valve	Air Breaking Valve
K	NC	NC
R	Self-holding type	NC

Note: R type is not optional with energy-saving vacuum meter. When R type power is more than 20ms, the vacuum occurs and continues, break valve power up, and the vacuum stops.

Blank: Without  
W: External vacuum  
detection  
N: Type NPN  
P: Type PNP

06:  $\varnothing 6$   
08:  $\varnothing 8$

2F: 2 links  
3F: 3 links  
...  
12F: 12 links

Code	Protocols Type	Outputs
PN32	PROFINET	32
EC32	EtherCAT	32
EP32	EtherNet/IP	32
DN32	DeviceNet	32
LK32	I/O Link	32

#### Order Example:

EZPJ series fieldbus type external vacuum control unit, NC supply valve, NC breaking valve, NPN type,  $\varnothing 6$  vacuum interfaces, 6 links, PROFINET protocol, 32 outputs. The ERP code is: EZPJ-K-N-06-6F-PN32

# EZPJ External Vacuum Control Unit (fieldbus Type)



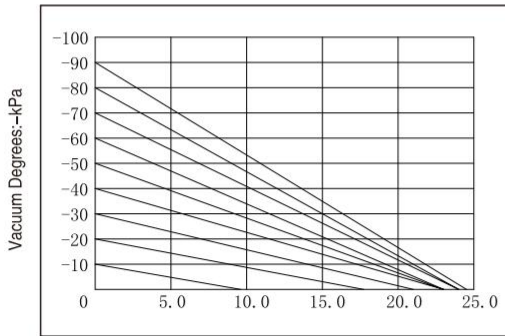
## Max suction flow at different vacuum (-kPa) (NL/min)

Specifications and Models	-10	-20	-30	-40	-50	-60	-70	-80	-90
EZPJ Single Valve	9.3	17.0	21.0	22.0	23.0	23.0	24.0	24.0	24.5

## Max backflow rate Of Different Gas Consumption(-kPa)(NL/min)

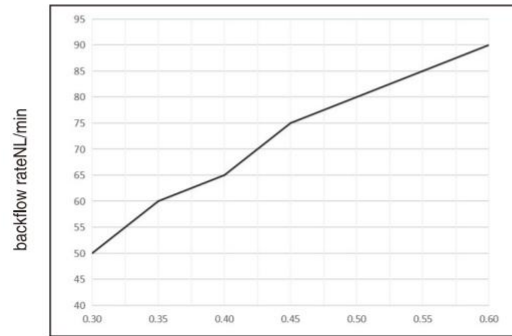
Specifications and Models	0.3	0.35	0.4	0.45	0.5	0.55	0.6
EZPJ Single Valve	50	60	65	75	80	85	90

Maximum suction flow rate of different vacuum degrees(-kPa)(nl/min)



Maximum suction flow rate:NL/min

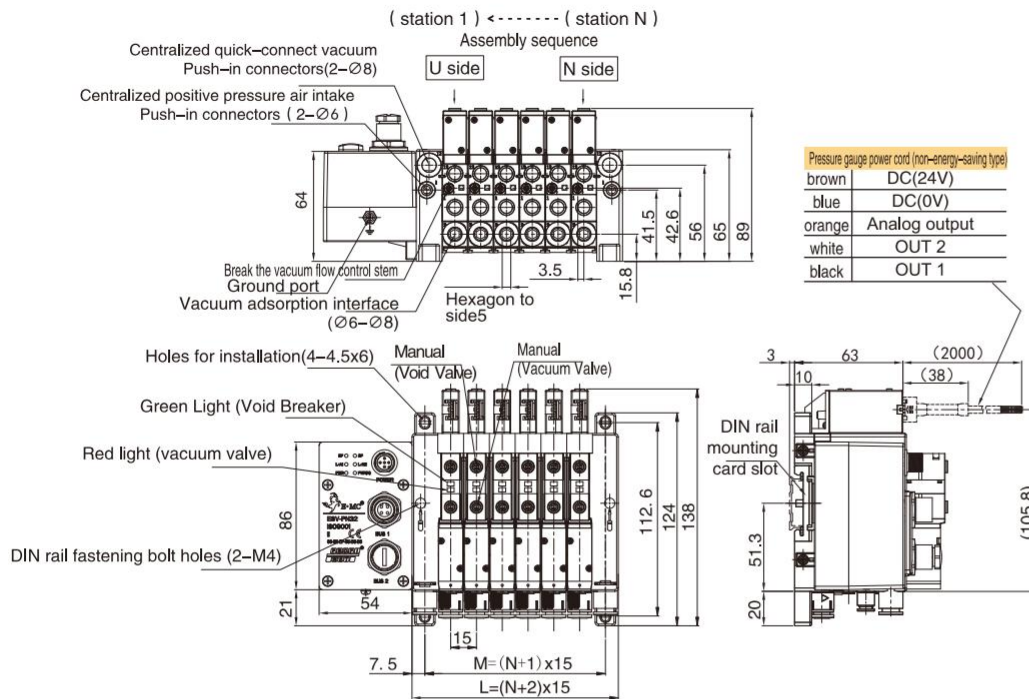
Maximum backflow rate of different gas consumption(-kPa)(nl/min)



Gas Consumption:MPa

## Main Dimension

EZPJ□-N/P with vacuum pressure gauge outline diagram (pressure gauge independent outlet)



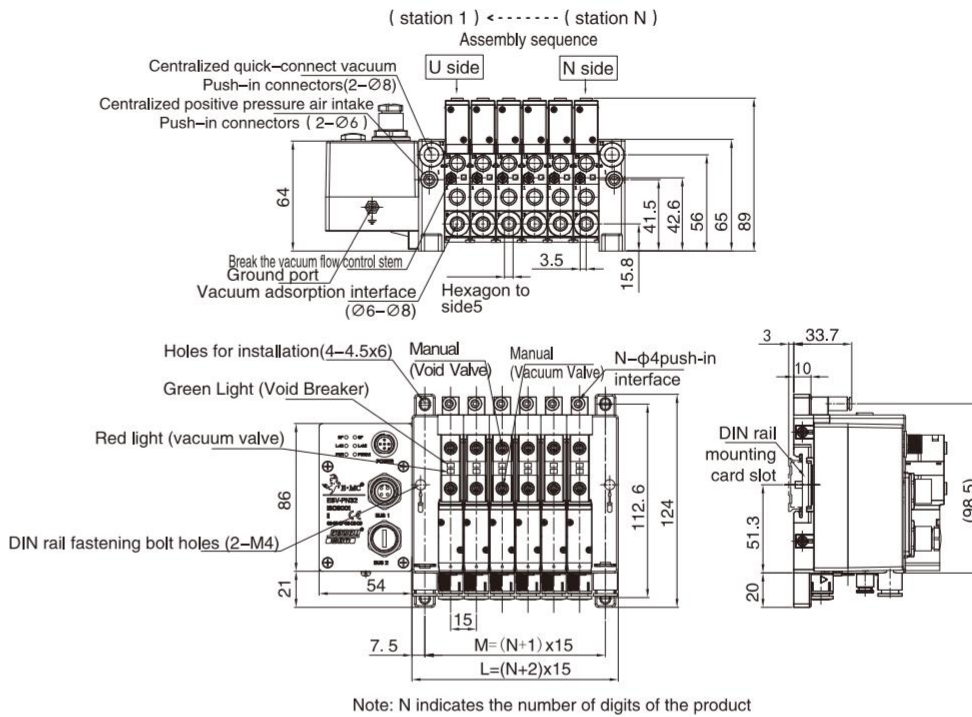
Note: N indicates the number of digits of the product

# EZPJ External Vacuum Control Unit (fieldbus Type)

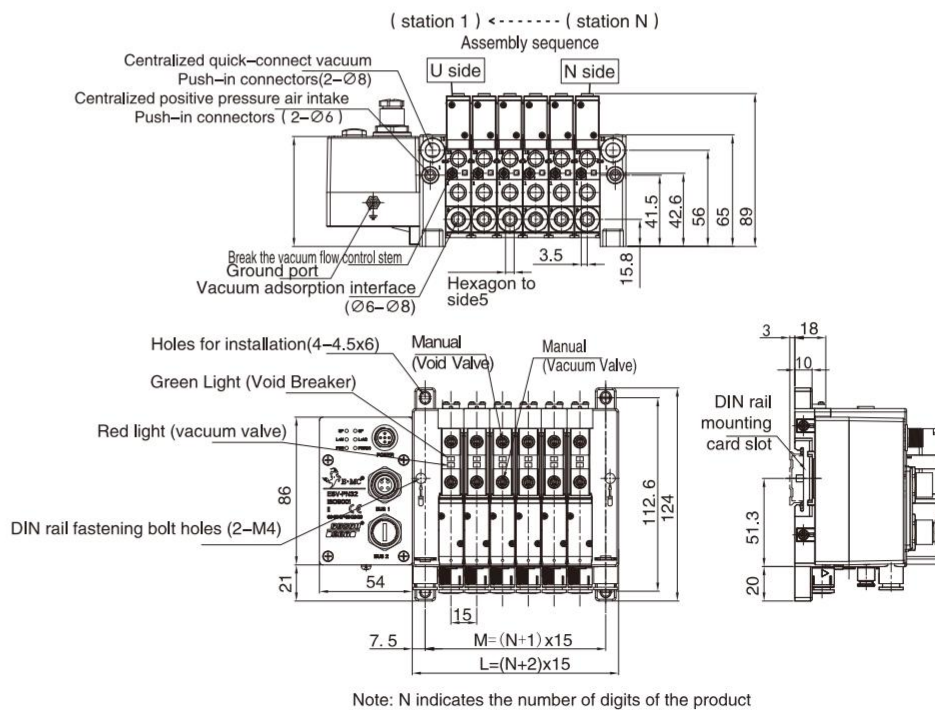


## Main Dimension

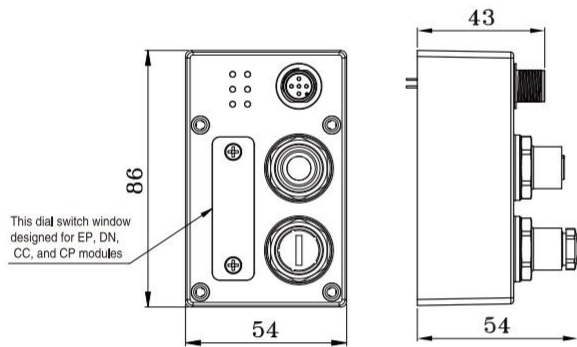
EZPJ□-W External Vacuum Detection Outline Diagram



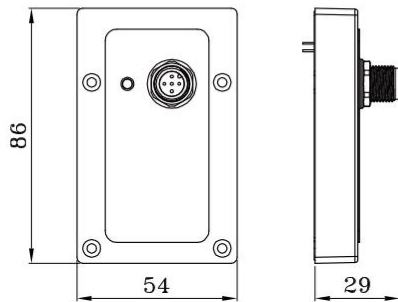
EZPJ□ without vacuum gauge outline drawing



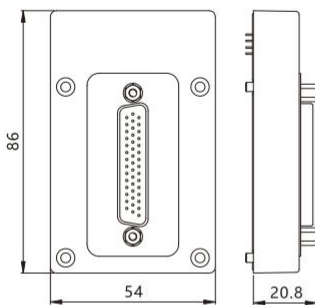
☉ Max suction flow at different vacuum (-kPa) (NL/min)



PN/EC/EP/DN/CC/CP Communication Protocol Control Module



IO-Link Communication Protocol Control Module



DB44 Module dimension

Note: Except Control module, the shape & size of ESV-DB44/LK/EC/PN/DN/CC/CP series are same.

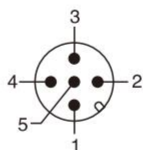
# EZPJ External Vacuum Control Unit (fieldbus Type)



## EZPJ Bus Module Specification Sheet

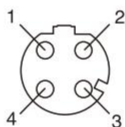
Code	EZPJ-PN32	EZPJ-EC32	EZPJ-EP32	EZPJ-DN32	EZPJ-LK32
Protocols	PROFINET	EtherCAT	EtherNet / IP	DeviceNet	I/O Link
Output	32				
Configuration files	GSDML	XML	EDS	EDS	IODD
Baud rate	100 Mbps		125/250/500 Kbps		COM2(38.4Kbps)
Control power supply	DC24V(DC22.6 ~ 26.4V)				
	≤ 120 mA		≤ 50 mA		≤ 25 mA
Output voltage	DC24V(DC22.6 ~ 26.4V)				
Power interface	M12,5pin,A encode				
Bus interface	2xM12 diagnosis, 4 holes D encode			M12 diagnosis+M12 chassis, 5 holes A encode	Class B
Diagnostic	system diagnosis,communication error, short circuit protection, open circuit detection, reverse connection protection, undervoltage and overvoltage diagnosis				system diagnosis,communication error, short circuit protection
Protection	IP40				
Storage temperature	-20 ~ 70°C				
Working temperature	-10 ~ 60°C				-10 ~ 50°C

### Power interface



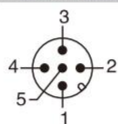
Pin	Type	Description
1	PS24	+24V Control voltage
2	PL24	+24V Operating voltage of load valve
3	PS0	0V Control voltage
4	PL0	0V Operating voltage of load valve
5	FE	Grounding

### PN/EC/EP bus interface

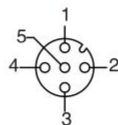


Pin	Type	Description
1	TD+	Send data+
2	RD+	Receive data+
3	TD-	Send data-
4	RD-	Receive data-

### DN bus interface



BUS IN



BUS OUT

Pin	Type	Description
1	DRAIN	shield
2	V+	24V+
3	V-	24V-
4	CAN_H	High level signal
5	CAN_L	Low level signal

# EZPJ External Vacuum Control Unit (fieldbus Type)



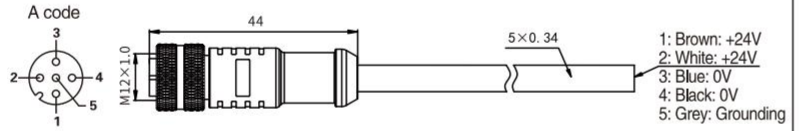
## How to order?

### PN/EC/EP/DN Power Cable (Unshielded)

**M125**    **□ - PVC - □**

M12 Female 5 cores    R: Straight Connector Type  
RL: Angled Connector Type

2M: 2meters  
5M: 5meters  
Other length could be customized

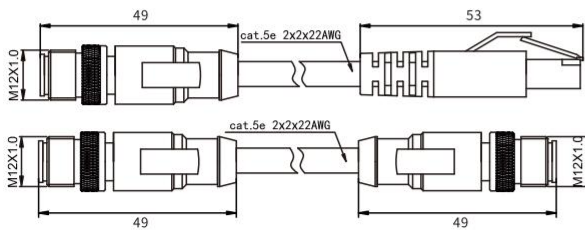


### PN/EC/EP Fieldbus Wiring (Shielded)

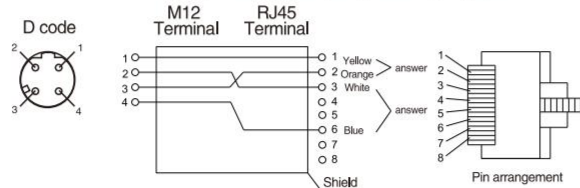
**ESV-EN**    **- □ - □**

EtherNet Fieldbus Wiring    M12RJ: M12 male connectors → RJ45  
M12M12: M12 male connectors → M12 male connectors

2M: 2meters  
5M: 5meters  
Other length could be customized



### Connections (Straight-through type)



### DN Fieldbus Wiring (Shielded)

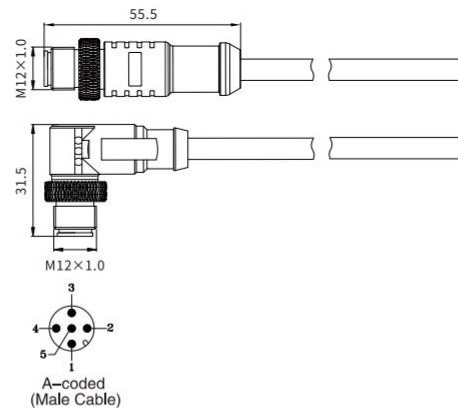
**ESV - Protocol - □ - □**

DN: DeviceNet/CANopen  
CC: CC-Link

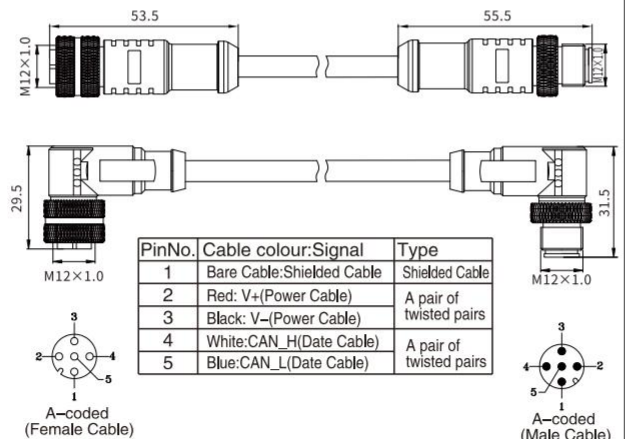
2M: 2meters  
5M: 5meters  
Other length could be customized

M12: M12 Female connector (straight type)  
M12L: M12 Female connector (angled type)  
M12F: M12 Male connector (straight type)  
M12FL: M12 Male connector (angled type)  
M12M12: M12 Male-Female double connectors (straight type)  
M12M12L: M12 Male-Female double connectors (angled type)

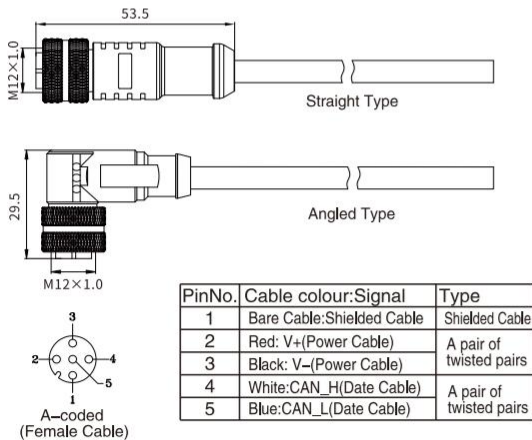
### DN Male Cable (Shielded)



### DN Male-Female double connection cable (Shielded)



### DN Female cable (Shielded)



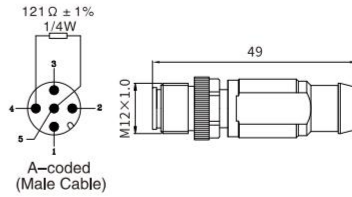
# EZPJ External Vacuum Control Unit (fieldbus Type)



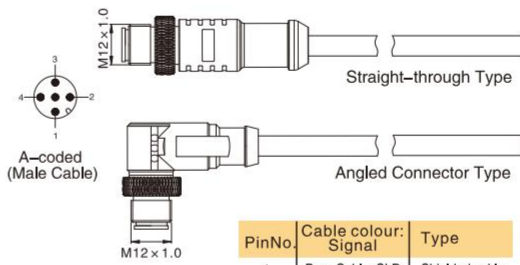
## How to order?

### DeviceNet Terminator

Series	Communication Protocol	R
ESV	DN; DeviceNet	R:terminal resistance

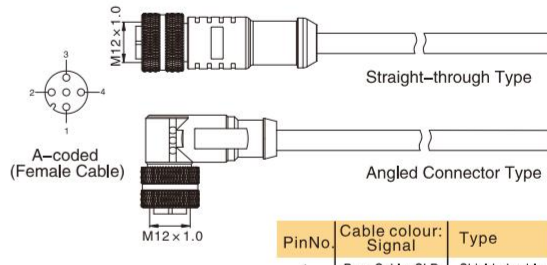


### CC Male Cable(Shielded)



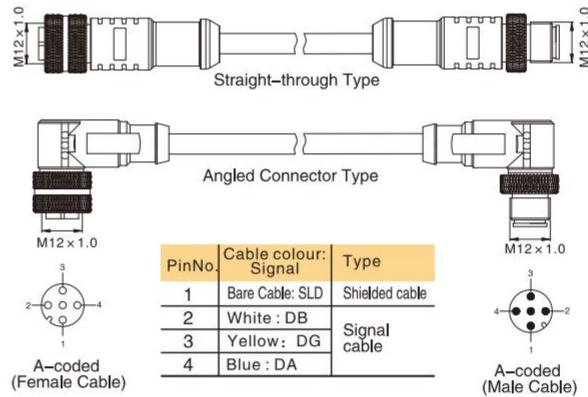
PinNo.	Cable colour: Signal	Type
1	Bare Cable: SLD	Shielded cable
2	White : DB	Signal cable
3	Yellow: DG	
4	Blue : DA	

### CC Female Cable(Shielded)



PinNo.	Cable colour: Signal	Type
1	Bare Cable: SLD	Shielded cable
2	White : DB	Signal cable
3	Yellow: DG	
4	Blue : DA	

### CC Male&Female Cable (Shielded)



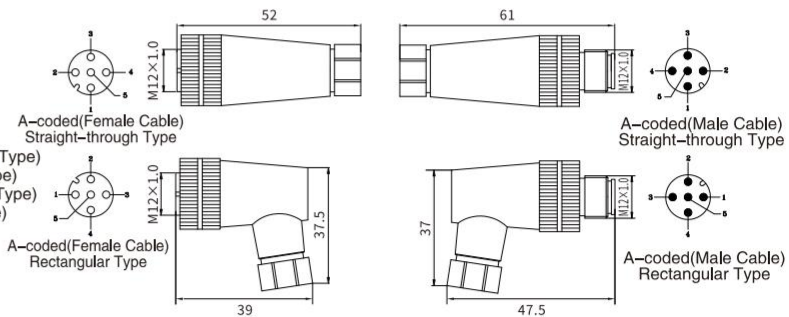
PinNo.	Cable colour: Signal	Type
1	Bare Cable: SLD	Shielded cable
2	White : DB	Signal cable
3	Yellow: DG	
4	Blue : DA	

### 5-Cores Connector ( M12-A Code )

**M125** □

5-Cores Connector ( M12-A Code )

R: Rotating Female Straight-through Type  
 RL: Rotating Female(Rectangular Type)  
 RF: Rotating Male (Straight-through Type)  
 RFL: Rotating Male Rectangular Type



Note: This connector also could be used in ESV valve terminal wiring, or DN, CC communication connection.

# EZPJ External Vacuum Control Unit (fieldbus Type)



## LED Indicators

**PROFINET**    **BF** ○ ○ **SF**  
**L/A1** ○ ○ **L/A2**  
**PWR** ○ ○ **PWR(V)**

Indicators	Status	Meaning
BF	Red light on	Communication not connected; Duplicate IP address/device name
	Red light flash	Module is connecting with PN master station, IP address or device name duplicated
	Green light on	System is normal
SF	Green light on	System is normal
	Red light flash	Short circuit of power supply, open circuit of load, reverse connection protection, upper limit of counting
L/A1	Yellow light on	BUS1 PROFINET connection
	OFF	BUS1 no internet connection
	Yellow light flash	BUS1 internet connection
L/A2	Yellow light on	BUS2 PROFINET connection
	OFF	BUS2 no internet connection
	Yellow light flash	BUS2 internet connection
PWR	OFF	Module without supply
	Green light on	Module with 24V supply
	Red light on	Module voltage too high
	Red light flash	Module voltage too low
PWR(V)	OFF	Load without supply
	Green light on	Load with 24V supply
	Red light on	Load voltage too high
	Red light flash	Load voltage too low

**EtherNet/IP**    **NS** ○ ○ **MS**  
**L/A1** ○ ○ **L/A2**  
**PWR** ○ ○ **PWR(V)**

Indicators	Status	Meaning
NS	OFF	Operating voltage not connected or IP address not set
	Red light flash	EtherNet/IP Communication timeout
	Green light flash	EtherNet/IP Communication not established
	Green light on	System is normal
MS	Red light flash	Short circuit of power supply, open circuit of load, reverse connection protection, upper limit of counting
	Green light on	System is normal
L/A1	Yellow light on	BUS1 EtherNet/IP connection
	OFF	BUS1 no internet connection
L/A2	Yellow light on	BUS2 EtherNet/IP connection
	OFF	BUS2 no internet connection
PWR	Green light on	Module with 24V supply
	Red light on	Module voltage too high
	Red light flash	Module voltage too low
	OFF	Module without supply
PWR(V)	Green light on	Load with 24V supply
	Red light on	Load voltage too high
	Red light flash	Load voltage too low

**EtherCAT**    **RUN** ○ ○ **ERR**  
**L/A IN** ○ ○ **L/A OUT**  
**PWR** ○ ○ **PWR(V)**

指示灯	状态	含义
RUN	OFF	Initial Status
	Green light flash	Pre-operational status
	Green light on	System is normal
ERR	OFF	normal Initial
	Red light flash	Initial failure
L/A IN	Green light on	BUS1 EtherCAT connection
	OFF	BUS1 no internet connection
	Green light flash	BUS1 internet connection
L/A OUT	Yellow light on	BUS2 EtherCAT connection
	OFF	BUS2 no internet connection
	Yellow light flash	BUS2 internet connection
PWR	OFF	Module without supply
	Green light on	Module with 24V supply
	Red light on	Module voltage too high
	Red light flash	Module voltage too low
PWR(V)	OFF	Load without supply
	Green light on	Load with 24V supply
	Red light on	Load voltage too high
	Red light flash	Load voltage too low; Reverse power connection

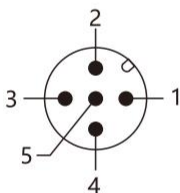
**DeviceNet**    **NS** ○ ○ **MS**  
**PWR** ○ ○ **PWR(V)**

Connection Indicators	NS	MS	Meaning
	OFF	OFF	No internet connection
	OFF	Red light on	Offline status, watchdog timer error
	OFF	Red light flash	Parameter writing error
	Red light on	Green light on	Bus off, MAC ID duplicate
	Red light flash	Green light flash	IO connection timeout
	Green light on	Green light on	Connection normal

Power Indicators	PWR	PWR(V)	Meaning
	OFF	OFF	Module not powered
	Green light on	Red light flash	Load without supply
	Red light on	Green light on	Module voltage too high
	Red light flash	Green light on	Module voltage too low
	Green light on	Red light on	Load voltage too high
	Green light on	Red light flash	Load voltage too low
	Green light on	Green light on	Supply normal

## Power Interface

Power interface(M12, A code, Class B)



Pin	Type	Description
1	PS24	+24V Control voltage
2	PL24	+24V Operating voltage of load valve
3	PS0	0V control voltage
4	C/Q	Data communication(IO-LINK)
5	PL0	0V operating voltage of load valve

## LED Indicators

LED Indicators	Status	Meaning
X1	OFF	Abnormal power supply
	Green on	Normal power supply, no establish protocols
	Red on	Fault or abnormal load power supply
	Green flash	Normal working

## Wiring

**M125**    □ — PVC — □

M12 Female 5 cores single connecting cable    R: Straight connector type    2M: 2 meters  
 RL: Angled connector type    5M: 5 Meters (Other length coil be customized)

**M12M125**    □ — PVC — □

M12 Female, 5 cores double connecting cable    R: Straight connector type; M12 male connectors -- M12 Femal connectors    2M: 2 meters  
 RL: Angled connector type; M12 male connectors -- M12 Femal connectors    5M: 5 Meters (Other length coil be customized)

**M12YM12**    □ — PVC — □

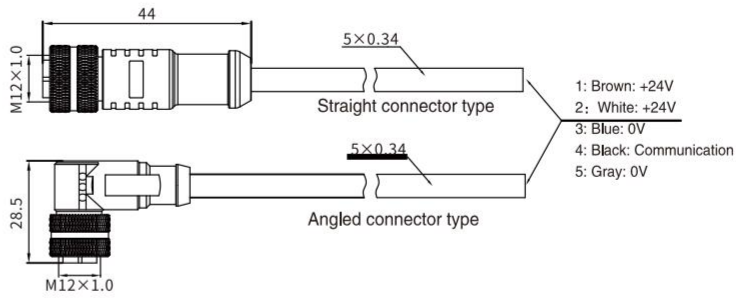
M12 Female, Y type connectors    R: Straight connector type    2M: 2 meters  
 RL: Angled connector type    5M: 5 Meters (Other length coil be customized)

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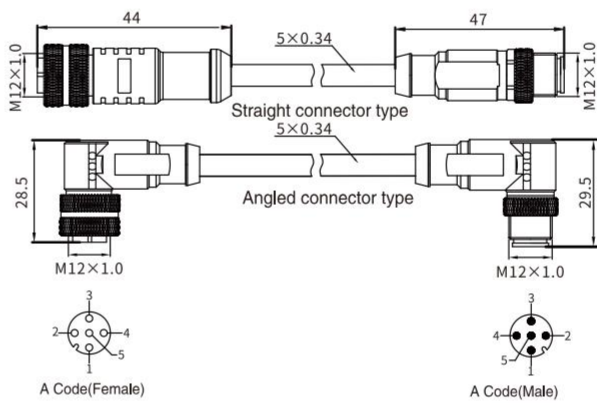


## Wiring

M12 Female 5 cores single connecting cable(Class B)



M12 Female, 5 cores double connecting cable(Class B)



M12 Female, Y type connectors(Class A to Class B)

