

EZAJ Series Intergrated Vacuum Generator (Fieldbus Type)



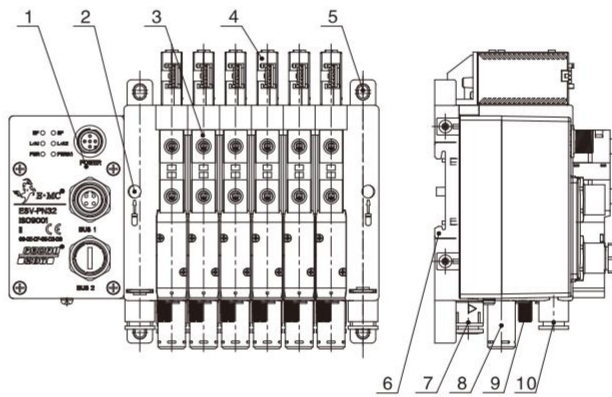
EZAJ

Intergrated Vacuum Generator (Fieldbus Type)



Applications / Features

- Multi-piece assembled EZA integrated vacuum generator structure, adopts centralized air supply, making tubing more convenient.
- Solenoid valve wiring adopts fieldbus module, making it more compact. Types of fieldbus communication protocols available (PROFINET, EtherCAT, EtherNet/IP, DeviceNET, I/O Link).
- Built-in integrated vacuum, vacuum breaking, silencer, self-holding and other functions.
- Built-in quick-replaceable vacuum filter makes installation and removal faster.
- Silencing exhaust and vent exhaust can be freely selected.
- 35mm clamp rail installation and screw hole installation combined, to meet different installation needs.
- Shielded cables have strong anti-interference ability and stable communication.



1. Fieldbus module. (Separate cable selection)
2. Guide rail fixing bracket, fastening bolt holes.
3. Monolithic integrated vacuum generator (assembled type).
4. Digital vacuum pressure gauge (optional).
5. Installation holes (4-4.5X6).
6. 35mm rail mounting slot.
7. Vacuum interface (Φ6 / Φ8).
8. External silencer/through hole scheduling interface (Φ8).
9. Vacuum breaking flow adjustment valve rod.
10. Air supply interface (2-Φ8).

How to Order?

SERIES CODE	NOZZLE DIAMETER		Vacuum gauge specifications	Vacuum interface	Exhaust type	Assembly links	Fieldbus Type																											
EZAJ: Integrated vacuum generator	07:Ø0.7 10:Ø1.0	<table border="1"> <tr> <td>Code</td> <td>supply valve</td> <td>Vacuum breaking valve</td> </tr> <tr> <td>K</td> <td>NC</td> <td>NC</td> </tr> <tr> <td>R</td> <td>Self-holding</td> <td>NC</td> </tr> </table> <p>Note: R-Type is not available with an energy-saving vacuum gauge. When R-type is energized for more than 20ms, vacuum occurs and continues. When the vacuum is energized, the vacuum stops.</p>	Code	supply valve	Vacuum breaking valve	K	NC	NC	R	Self-holding	NC	Blank: Without gauge W: External vacuum detection N: Type NPN P: Type PNP	06: Ø6 08: Ø8	Blank: silencer (default) D: Exhaust port (φ8)	2F: 2 links 4F: 4 links 6F: 6 links 8F: 8 links 10F: 10 links 12F: 12 links	<table border="1"> <tr> <th>code</th> <th>Fieldbus Type</th> <th>Output Point</th> </tr> <tr> <td>PN32</td> <td>PROFINET</td> <td>32</td> </tr> <tr> <td>EC32</td> <td>EtherCAT</td> <td>32</td> </tr> <tr> <td>EP32</td> <td>EtherNet/IP</td> <td>32</td> </tr> <tr> <td>DN32</td> <td>DeviceNet</td> <td>32</td> </tr> <tr> <td>LK32</td> <td>I/O Link</td> <td>32</td> </tr> </table>	code	Fieldbus Type	Output Point	PN32	PROFINET	32	EC32	EtherCAT	32	EP32	EtherNet/IP	32	DN32	DeviceNet	32	LK32	I/O Link	32
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Order Example:

EZAJ Fieldbus Vacuum Generator, ø1.0 nozzle diameter, NC supply valve, NC vacuum breaking valve, NPN vacuum gauge, ø6 vacuum interface, exhaust port(ø8), set installation digits 6F, PROFINET fieldbus type, 32 output. Order Code: EZAJ10K-N-06-D-6F-PN32

Performance Parameter

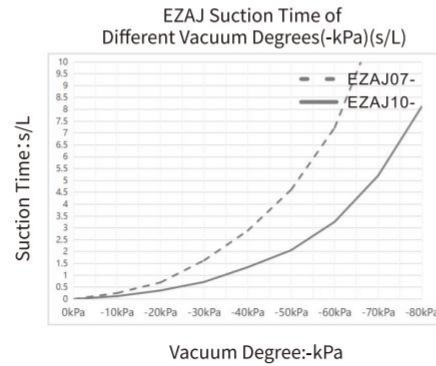
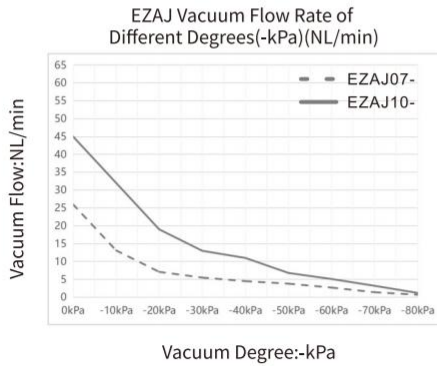
Model specifications	Rated air supply pressure Mpa	Maximum vacuum-kPa	Maximum vacuum flow NL/min	Single generator air consumption NL/min	Air supply interface mm	Vacuum interface mm	Noised B(A)
EZAJ 07-	0.35	85	26	15	2-φ8	φ6 / φ8	62
EZAJ 10-	0.35	85	45	40	2-φ8	φ6 / φ8	74

Vacuum Flow Rate of Different Degrees(-kPa)(NL/min)

Model	Rated air supply pressure Mpa	Single generator air consumption NL/min	0	10	20	30	40	50	60	70	80	Maximum vacuum-kPa
EZAJ 07-	0.35	15	26	13.1	7.1	5.5	4.5	3.8	2.7	1.4	0.4	85
EZAJ 10-	0.35	40	45	32	19	13	11	6.8	5.1	3.2	1.2	85

Suction time at different vacuum degrees (-kPa)

Model	Rated air supply pressure Mpa	Single generator air consumption NL/min	0	10	20	30	40	50	60	70	80	Maximum vacuum-kPa
EZAJ 07-	0.35	15	0	0.25	0.70	1.63	2.68	4.61	7.23	11.85	18.77	85
EZAJ 10-	0.35	40	0	0.12	0.36	0.72	1.34	2.06	3.26	5.21	8.12	85



Bus Type (Integral) Vacuum Generator

SERIES CODE	NOZZLE DIAMETER	Vacuum gauge specifications	Vacuum interface	Exhaust type	Assembly links	Fieldbus Type
07:Ø0.7 10:Ø1.0	Code K	supply valve NC	T: Sensor Type	06:Ø6 08:Ø8	None: Silencer (default) D: Exhaust Port (Ø8)	code Ec24

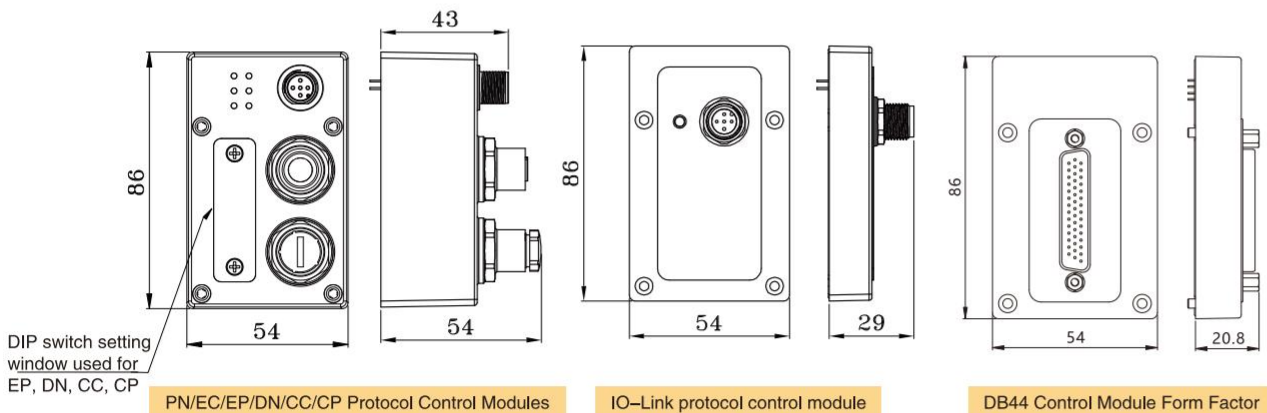
EZAJ: Bus Type (Integral) Vacuum Generator

Intake method	Intake caliber	EZA□07	EZA□10	Self-maintaining
Unilateral intake	1-Ø8	8 links	6 links	4 links
Both sides intake	2-Ø8	10 links	9 links	6 links
non-simultaneous open digit		12 links	12 links	12 links

Order Example:

EZAJ Bus Type (Integral) Vacuum Generator, with a nozzle diameter of Ø1.0, NC supply valve, NC exhaust valve, T vacuum gauge specification, vacuum interface of Ø6, exhaust port (Ø8), 6 positions for assembly, EtherCAT protocol, and 24 outputs. The order code is: EZAJ10K-T-06-D-6F-FC32

Control module



PS: Except for the control module, ESV-DB44/LK/EC/PN/EP/DN/CC/CP series have the same overall dimensions.

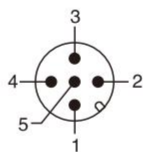
EZAJ Series Intergrated Vacuum Generator (Fieldbus Type)



EZAJ Bus Module Specification Sheet

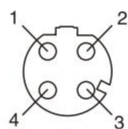
Specification	EZAJ-PN32	EZAJ-EC32	EZAJ-EP32	EZAJ-DN32	EZAJ-LK32
communication protocol	PROFINET	EtherCAT	EtherNet / IP	DeviceNet	I/O Link
Output points	32				
configuration files	GSDML	XML	EDS	EDS	IODD
Baud rate	100 Mbps		125/250/500 Kbps		COM2(38.4Kbps)
Power Control	Voltage	DC24V(DC22.6 ~ 26.4V)			
	Current	≤ 120 mA	≤ 50 mA		≤ 25 mA
Output supply voltage	DC24V(DC22.6 ~ 26.4V)				
Power interface	M12 plug, 5-pin, A encode				
Fieldbus interface	2 x M12 plug, 4 holes, D-coded			M12 plug+M12 socket,5holes,A-coded	
Device specific diagnosis	System diagnosis, communication error, short circuit protection, open circuit detection, reverse protection, over and under voltage diagnosis			System diagnosis, communication error, short circuit protection	
Protection level	IP40				
Storage temperature	-20 ~ 70°C				
Storage temperature	-10 ~ 60°C			-10 ~ 50°C	

Power interface



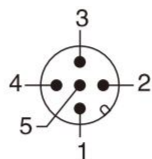
Pin	Name	Description
1	PS24	Control voltage+24V
2	PL24	Load valve operating voltage+24V
3	PS0	Control voltage 0V
4	PL0	Load valve operating voltage 0V
5	FE	Grounding

PN/EC/EP fieldbus Interface

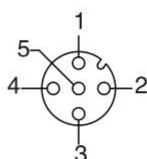


Pin	Name	Description
1	TD+	TD+
2	RD+	RD+
3	TD-	TD-
4	RD-	RD-

DN Fieldbus interface



BUS IN



BUS OUT

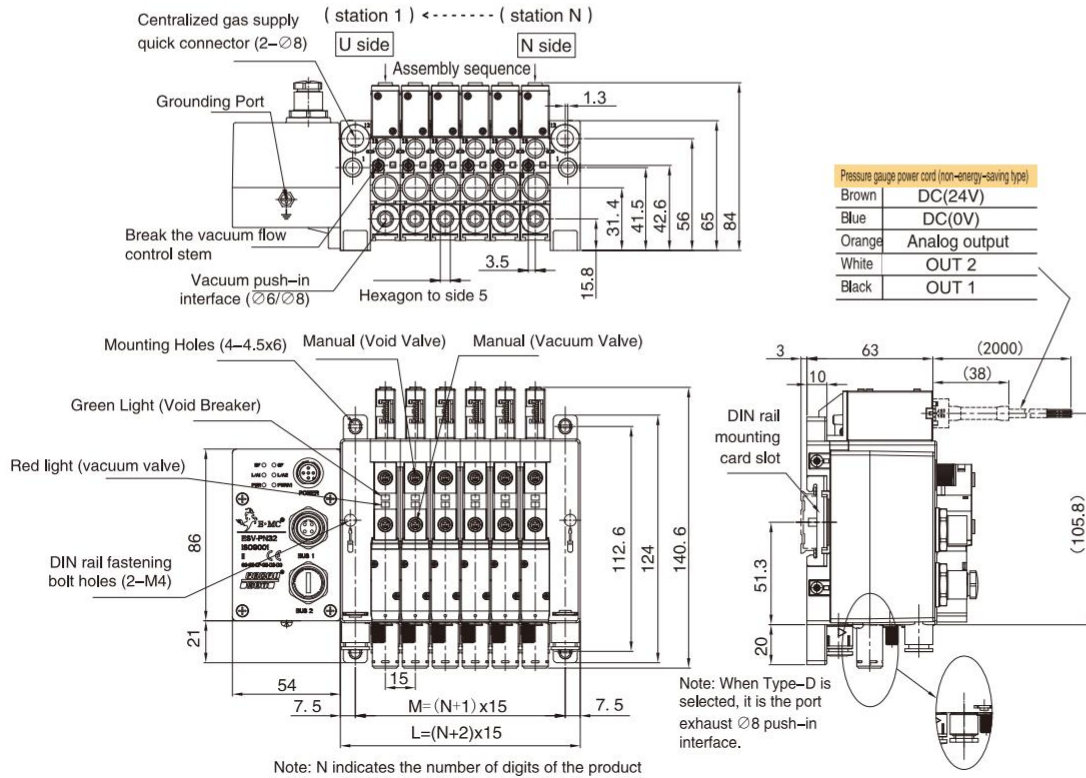
Pin	Name	Description
1	DRAIN	Shield
2	V+	24v+
3	V-	24v-
4	CAN_H	High Level Signal
5	CAN_L	Low Level Signal

EZAJ Series Intergrated Vacuum Generator (Fieldbus Type)

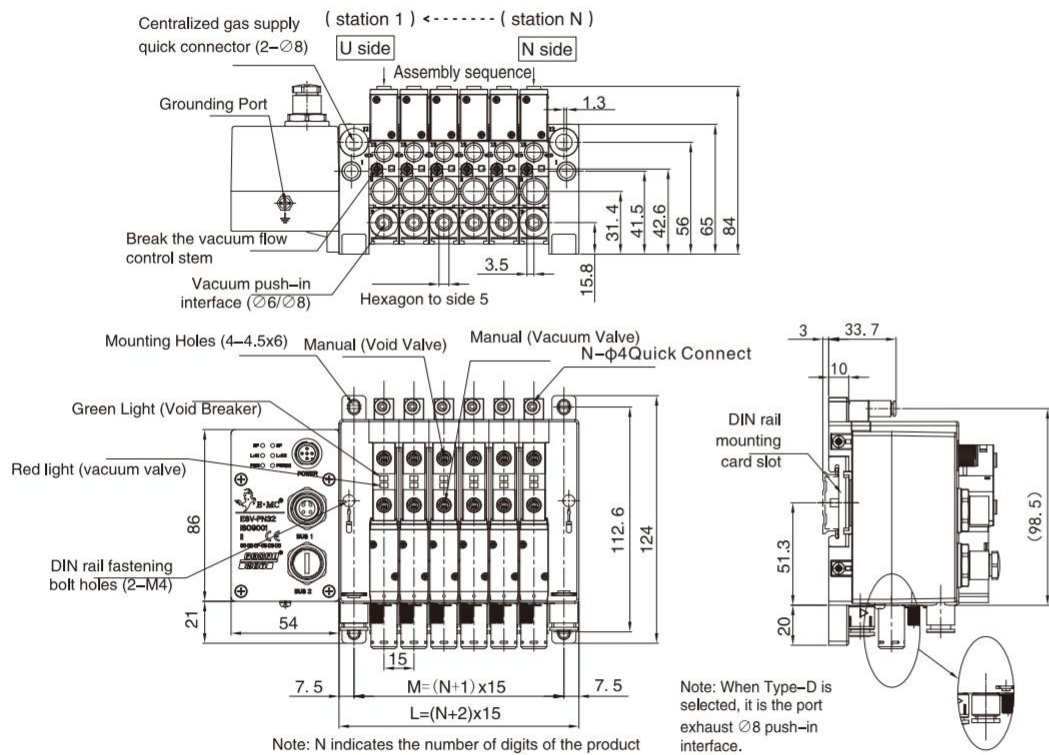


Dimensions(mm)

EZAJ□-N/P Vacuum Pressure Gauge with Separate Wiring Diagram



EZAJ□-W External Vacuum Detection Schematic Diagram



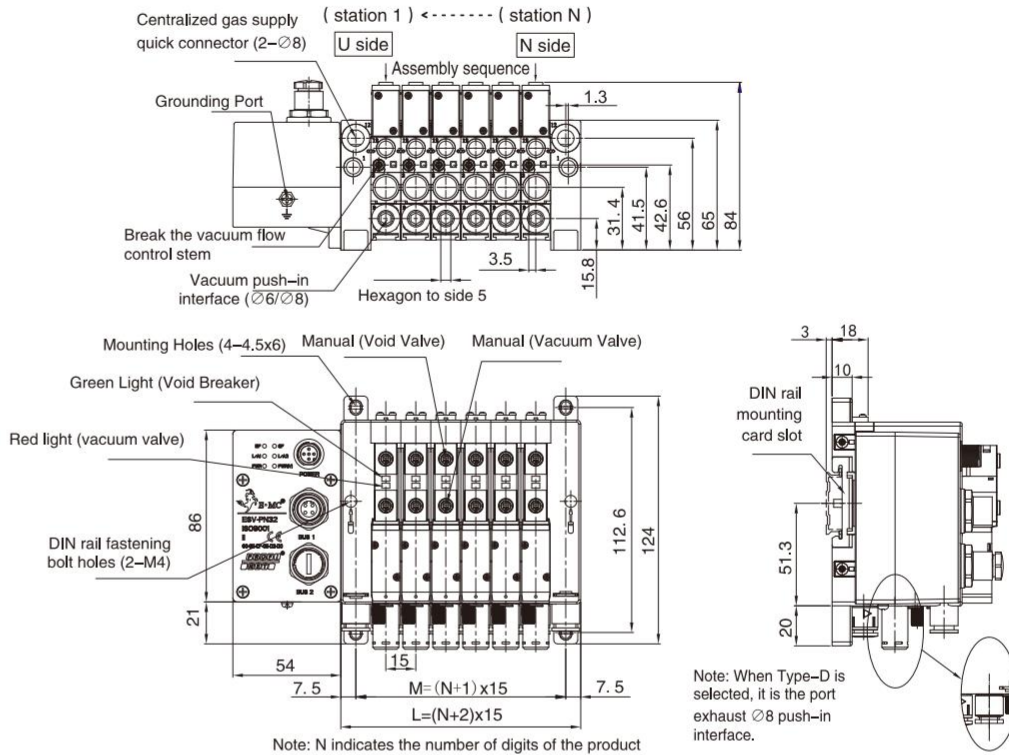
EZAJ

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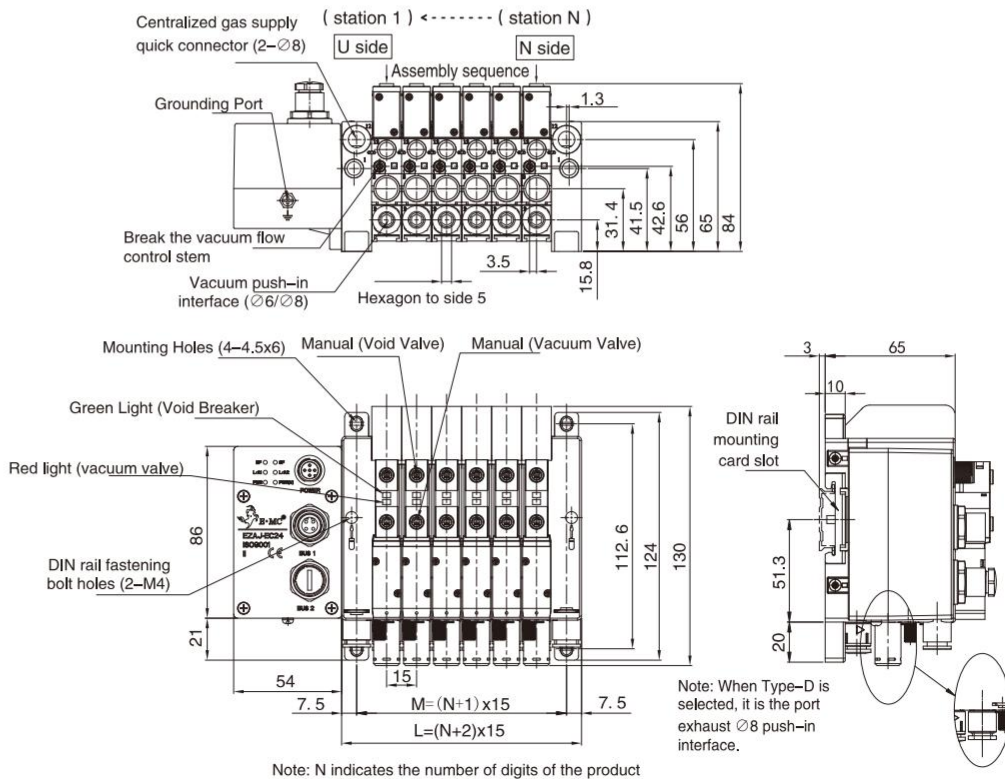


Dimensions(mm)

EZAJ without Vacuum Pressure Gauge Schematic Diagram



EZAJ□-T-□EC24 Pressure Sensor Schematic Diagram with Pressure Sensor on Bus Line



EZAJ Series Intergrated Vacuum Generator (Fieldbus Type)



Cable Ordering Code

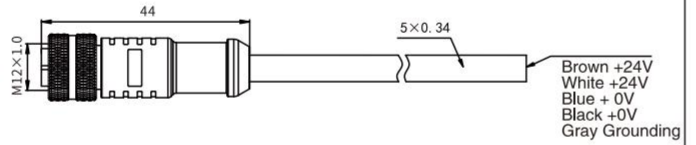
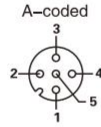
PN/EC/EP/DN power cable (unshielded)

M125 **□** - PVC - **□**

M12 Female 5 cores power cable

R: Straight-through type
RL: Rectangular type

2M: 2 meters
5M: 5 Meters
(Other length could be customized)



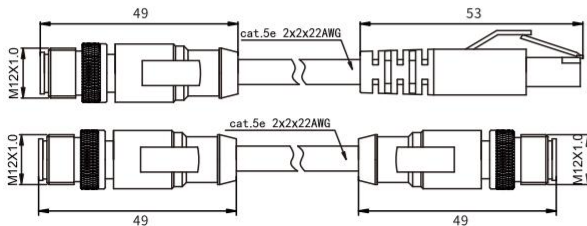
PN/EC/EP bus cable (shielded)

ESV-EN - **□** - **□**

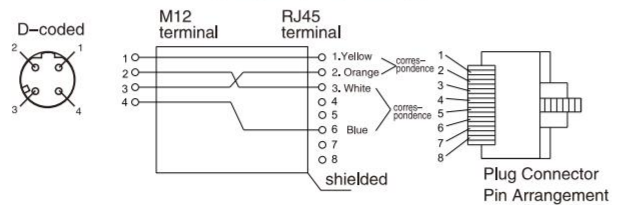
Ethernet Fieldbus wiring

M12RJ: M12 male connectors ↔ RJ45
M12M12: M12 male connectors ↔ M12 male connectors

2M: 2 meters
5M: 5 Meters
(Other length could be customized)



Wiring diagram (through cable)



DN Bus cable (shielded)

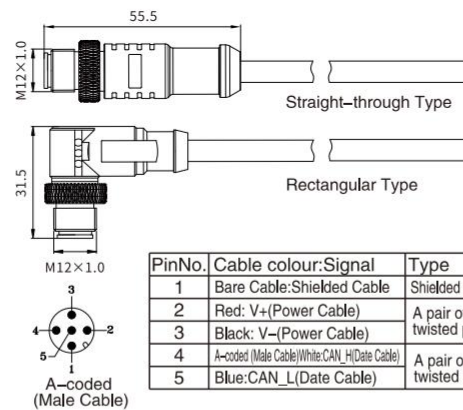
ESV - Protocol - **□** - **□**

DN: DeviceNet/CANopen
CC: CC-Link

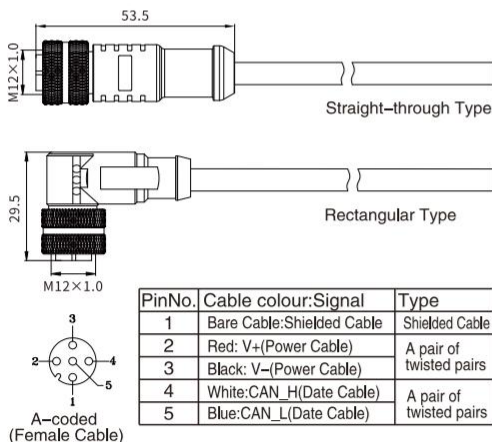
2M: 2 meters
5M: 5 Meters
(Other length could be customized)

M12: M12 Female (Straight-through type)
M12L: M12 Female (Rectangular type)
M12F: M12 Male (Straight-through type)
M12FL: M12 Male (Rectangular type)
M12M12: M12 Male&Female (Straight-through type)
M12M12L: M12 Male&Female (Rectangular type)

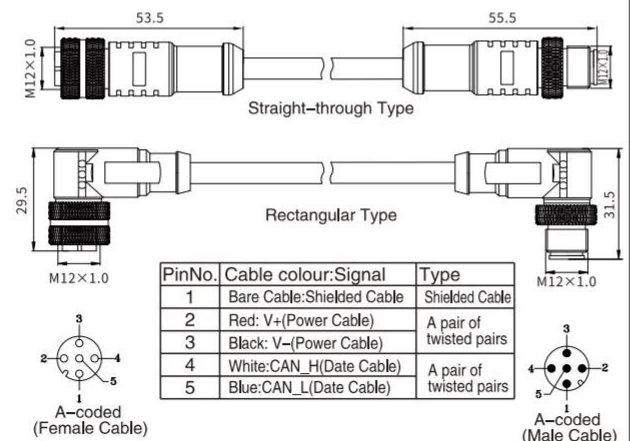
DN Male Cable (Shielded)



DN Female Cable (Shielded)



DN Male Cable (Shielded)



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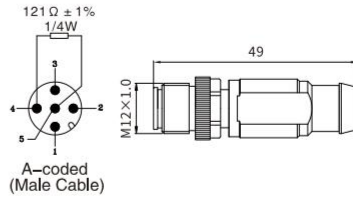


Cable Ordering Code

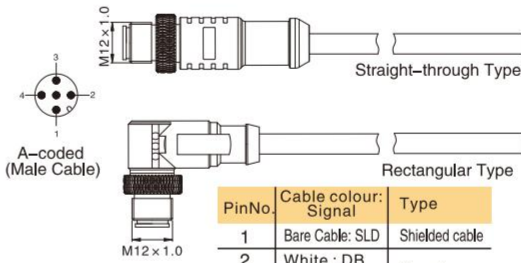
DeviceNet terminal resistance

Series — Communication Protocol — R

ESV DN; DeviceNet R:terminal resistance

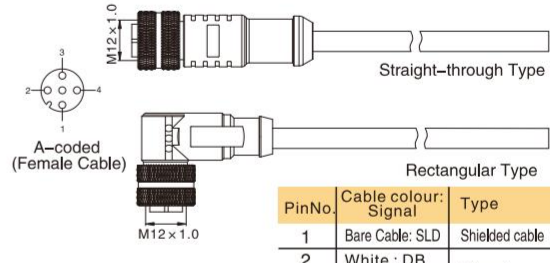


CC Male Cable(Shielded)



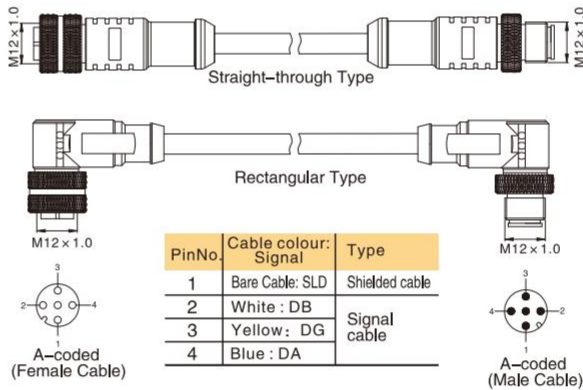
PinNo.	Cable colour: Signal	Type
1	Bare Cable: SLD	Shielded cable
2	White : DB	Signal cable
3	Yellow: DG	
4	Blue : DA	

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	

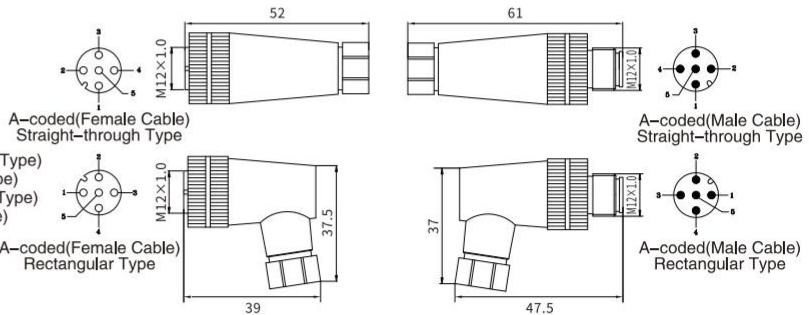
5-Cores Connector (M12-A Code)

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: these connectors can be used as power cable or communication cable for DeviceNet / CC Link



EZAJ Series Intergrated Vacuum Generator (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
	Red light on	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
MS	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 EtherNet/IP connection
	OFF	BUS1 no internet connection
L/A2	Yellow light flash	BUS1 internet 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
	Red light on	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

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

Indicators	Status	Meaning
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
	Red light on	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 confection

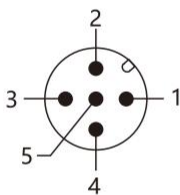
DeviceNet **NS** ○ ○ **MS**
PWR ○ ○ **PWR(V)**

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 could 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 could be customized)

M12YM12 — PVC —

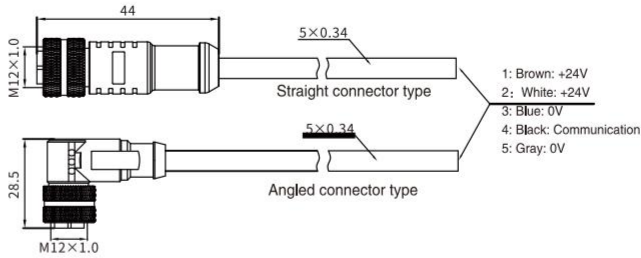
M12 Female, Y type connectors R: Straight connector type 2M: 2 meters
 RL: Angled connector type 5M: 5 Meters (Other length could be customized)

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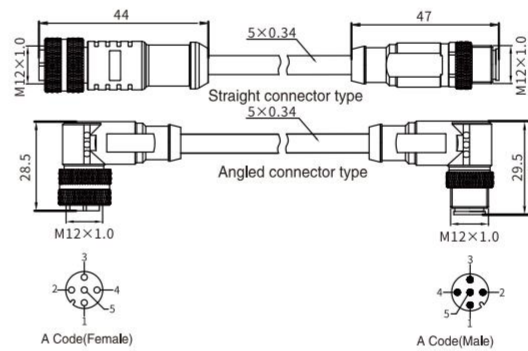


Wiring

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)

