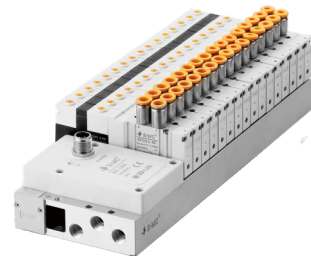


ESV

Solenoid Valve & Valve Terminal



Product Features

- Compatible Protocols: PROFIBUS, EtherCAT, EtherNet/IP, DeviceNet, CC-Link, CANopen and PROFIBUS DP.
- 32 output and 48 output optional.
- Equipped with two M12 BUS Interface, realize daisy-chain wiring communication, branch connector is not necessary.
- system diagnosis, communication error, working life count, short circuit protection, open circuit inspection, opposite connection protection, undervoltage and overvoltage diagnosis.
- Safe output can be set at any point in module parameter interface. For example, when the bus connection is interrupted, the valve could keep the last condition, or be forced to close or open.
- The shielded cable has strong anti-interference ability and the communication is stable and reliable.

Product Features

- Compatible Protocols: I/O-Link, general-purpose 5-wire unshielded cables are used for connection I/O-Link master and exchange data with PLC.
- Support hot swap, data is stored in the I/O-LINK master, no need to reconfigure parameters to replace the valve island, The newly replaced is automatically identified and start to work at once, reduce equipment downtime, reduce maintenance costs, and improve production efficiency
- Diagnostic functions: system diagnosis, communication error, short circuit protection.
- Independent of fieldbus, possess strong industrial network compatibility, supply popular fieldbus and industry ethernet.
- Communication is completely digitally transmitted, reduce the accuracy loss of analog-to-digital conversion, possess strong anti-interference ability. Maximum transmission distance is 20 meters.

How to Order?

ES Fieldbus Valve Terminal

Series No. Body Size Piping Type — Communication Protocol — Voltage — Pilot Type — Manual Button — Wiring Type — Manifold Port — Mounting — Thread Type

ES: Fieldbus valve terminal
ESN: Energy saving fieldbus valve terminal
1: 1 series
2: 2 series

V: Top ported
VM: Side ported
VB: Bottom ported

Valve quantity for different port

Qqty

E4: DC24V
Blank: Internal pilot
①WB: External pilot

Blank: Press & Rotate Lock
H: Without Lock

Blank: Double control wiring (max.24 links)
S: Single control wiring (max.24 links)
(Note: Mix wiring is available to customize)

Blank: G

Blank: Without accessories
④D: With DIN rail clip and 1M guide rail
④D0: With DIN rail clip, no guide rail
(If a DIN rail is selected, the DIN rail will be packaged separately.)

Protocols type	Communication Protocol	Output	Max Valve Quantity	
			Single control	Double control
PN32	PROFINET	32	24	16
PN48		48	-	24
EP32	EtherNet/IP	32	24	16
EP48		48	-	24
EC32	EtherCAT	32	24	16
EC48		48	-	24
CC32	CC-Link	32	24	16
CC48		48	-	24
DN16	DeviceNet	16	16	8
DN32		32	24	16
CP32	CANopen	32	24	16
CP48		48	-	24
DP32	PROFIBUS DP	32	24	16
DP48		48	-	24
LK16	IO-Link	16	16	8
LK32		32	24	16
LK48		48	-	24
DB44	D-SUB44	42		②

Series	Code	Port size	Remark
1	M5	M5 port	assembly sequence, 1st link start from U side
	C4	Ø4 one-touch fitting(ZPOC04-M7C)	
	M7	M7 port	
2	C6	Ø6 one-touch fitting(ZPOC06-M7C)	assembly sequence, 1st link start from U side
	06	1/8 port	
	C4	Ø4 one-touch fitting(ZPOC04-01G)	
	C6	Ø6 one-touch fitting(ZPOC06-01G)	

Code	Port Entry		Remark
	Silencer, Fitting size	1 Series 2 Series	
Blank	Both side without silencer, fitting, plug	- -	1. plugs are mounted on the opposite of the selected ports; 2. only U,U1, UL is available for bottom ported
U	U side with silencer, PC fitting	Ø8 Ø10	
N	Station N with silencer, PC fitting		
UN	Both side with silencer, PC fitting		
UL	U side with silencer, PL fitting		
NL	Station N with silencer, PL fitting		
UNL	Both side with silencer, PL fitting		
U1	U side with silencer, PL fitting		
N1	Station N with silencer, POC fitting		
UN1	Both side with silencer, POC fitting		

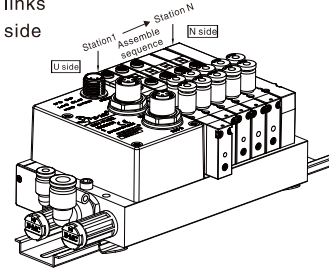
Note

- ①Y/H/U is not available for external pilot due to the air return.
- YK/HK/UK is available for external pilot due to the spring return.
- 16 output points module can control 16 coils maximum, suitable for 2 to 8 pcs double control valves, or 2 to 16 pcs single control valves.
- 32 output points module can control 32 coils maximum, suitable for 2 to 16 pcs double control valves, or 2 to 24 pcs single control valves.
- 48 output points module can control 48 coils maximum, when the coils is more than 32, suitable for 17 to 24 pcs double control valves only.
- ②ESV-DB44 is multi-pins valve terminal, can control 42 coils maximum and 24 valve stations maximum, suitable for 13 to 18 pcs double control valves, when the coils is more than 36, station 19 to 24 can be single control valves only.
- Pressure separate is same as SV series.
- ③When the inlet and exhaust module has an inlet connection of C4/C6/C8, a muffler is assembled at the exhaust port by default; When the connection is M7/1/8, no muffler is assembled at the exhaust port by default; For the manifold plate of VM/VB type, no connector is assembled at the corresponding valve position's port 2/4 by default.
- ④This option is not available for the bottom connection type (VB).

Code	Function	Remark
S	5/2 single	assembly sequence 1st link start from U side
D	5/2 double	
C	5/3 center closed	
P	5/3 center pressure	
E	5/3 center exhaust	
Y ①	2pcs 3/2 (N.C.)	
H ①	2pcs 3/2 (N.O.)	
U ①	2pcs 3/2 (N.O./N.C.)	
YK ①	2pcs 3/2 (N.C.) spring return	
HK ①	2pcs 3/2 (N.O.) spring return	
UK ①	2pcs 3/2 (N.O./N.C.) spring return	
B	Blind Plate	
TA	Inlet pressure zone at port 1	
TG	Exhaust pressure zones at ports 3 and 5	
TL	Combined inlet and exhaust pressure zones at ports 1, 3, and 5	
③N	Inlet and exhaust module	

Order Example:

1. Same valve: ES Fieldbus Valve Terminal, 1 series body, top ported, PROFINET, 32 outputs, 6 links 5/2 double controlled, port size M5, DC24V, G thread, internal pilot, double control wiring, both side without silencer, fitting, plug, the ERP code is ES1V-PN32-6D-M5E4.
2. Mix different valves: ES series fieldbus system, 1 series body, top ported, PROFINET, 32 outputs, see right picture : station 1 is 5/3 center closed SV5312C, station 2 is 5/2 double control SV5212, station 3 is 2pcs 3/2 (N.O.) spring return SV5412HK, station 4 & station 5 are 5/2 single SV5211, station 6 is blind plate. station 1 & 2 with $\varnothing 6$ one-touch fitting ZPOC06-M7C, station 3~5 with with $\varnothing 4$ one-touch fitting ZPOC04-M7C, DC24V, G thread, external pilot, double control wiring, U-sub side with silencer, $\varnothing 8$ one-touch fitting EPL, with DIN rail clip and 1M guide rail, the ERP code is ES1V-PN32-CDHK2SB-2C63C4E4-WB-UL-D
3. Mix different valve with pressure separate: ES series valve terminal, 1 series body, top ported, PROFINET protocol, 32 output points, see right picture : station 1 is 5/3 center closed SV5312C, port 1 air supply pressure separate between station 1 and station 2, station 2 is 5/2 double control SV5212, station 3 is air supply & exhaust module, station 4 is 2pcs 3/2 (N.O.) SV5412Hport 1 air supply pressure separate between station 4 and station 5, station 5 is 5/2 single SV5211, station 6 is blind plate, working port is M7, DC24V, internal pilot, double control wiring, both sides without silencer, fittings, plugs, G thread, the ERP code is ES1V-PN32-CTADNHTASB-M7E4

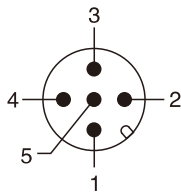


ESV-PN/EC/EP/DN/CC/CP/DP Series

Specifications

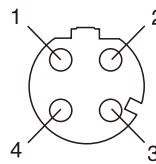
Model	ES1V(VM/VB)-PN32/48 ES2V(VM/VB)-PN32/48	ES1V(VM/VB)-EC32/48 ES2V(VM/VB)-EC32/48	ES1V(VM/VB)-EP32/48 ES2V(VM/VB)-EP32/48	ES1V(VM/VB)-DN16/32 ES2V(VM/VB)-DN16/32	ES1V(VM/VB)-CC32/48 ES2V(VM/VB)-CC32/48	ES1V(VM/VB)-CP32/48 ES2V(VM/VB)-CP32/48	ES1V(VM/VB)-DP32/48 ES2V(VM/VB)-DP32/48
Protocols	PROFINET	EtherCAT	EtherNet/IP	DeviceNet	CC-Link	CANopen	PROFIBUS DP
Configuration files	GSDML file	XML file	EDS file		CSP+file	EDS file	GSD file
Outputs	32/48			16/32	32/48		
Baud rate	100Mbps			125/250/500Kbps	156/625kbps/2.5/5/10Mbps	10/20/50/125/250/500/800/1000Kbps	0.6/19.2/93.75/187.5/500kbps 1.5/3/6/12Mbps self suit
Control Voltage	DC24V(DC21.6 ~ 26.4V)						
power supply	Below 120mA			Below 50mA			
Current consumption							
Output voltage(valve)	DC24V(DC22.8 ~ 26.4V)						
Power interface	M12, 5pin, A encode						
Bus Interface	2xM12 socket, 4 holes, D encode			M12 pin +M12 socket, 5 holes, A encode			M12 pin+M12 socket, 5 holes, B encode
Diagnostic	system diagnosis, communication error, short circuit protection, open circuit inspection, opposite connection protection, undervoltage and overvoltage diagnosis						
Protection	IP40						
Storage temperature(°C)	-20 ~ 70°C						
Working temperature(°C)	-10 ~ 60°C						

Power interface



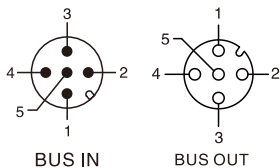
Pin No.	Type	Description
1	PS24	+24V Control voltage +24V
2	PL24	+24V Operating voltage of load valve
3	PS0	0V Control voltage 0V
4	PL0	0V Operating voltage of load valve
5	FE	Grounding

PN/EC/EP Bus Interface



Pin No.	Type	Description
1	TD+	Send data+
2	RD+	Receive data+
3	TD-	Send data-
4	RD-	Receive data-

DN/CC/CP Bus Interface



DN

Pin No.	Type	Description
1	DRAIN	Shield
2	V+	24V+
3	V-	24V-
4	CAN_H	High level signal
5	CAN_L	Low level signal

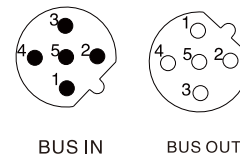
CC

Pin No.	Type	Description
1	SLD	Blocking
2	DB	Data Exchange
3	DG	
4	DA	
5	Blank	Unused

CP

Pin No.	Type	Description
1	CAN_SHLDV+	CAN Shield(option)
2	CAN_V+	24V+
3	CAN_GND	CAN Ground Connection
4	CAN_H	High level signal
5	CAN_L	Low level signal

DP Bus Interface



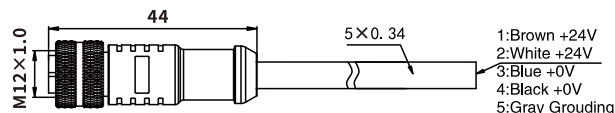
Pin No.	BUS IN	BUS OUT	Description
1	-	VP(P5V)	Voltage +5V
2	Rxd / TxD-N	RxD/TxD-N	Data cable A
3	-	DGND(M5V)	Data ground
4	Rxd / TxD-P	RxD/TxD-P	Data cable B
5	FE	FE	Functional ground

☉ Cable Ordering encode

PN/EC/EP/DN/CC/CP/DP Power Cable (Unshielded)

M125 - PVC -

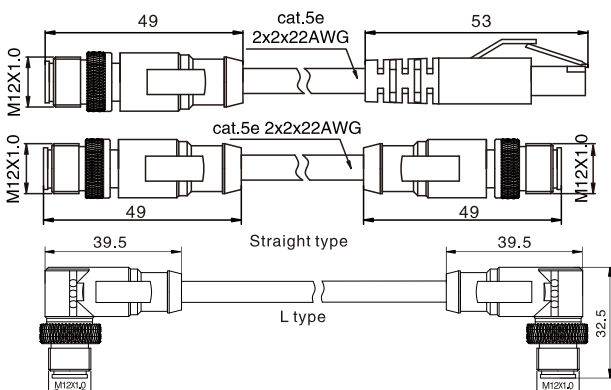
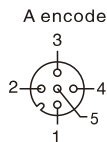
M12 Female R: Straight connector type 2M: 2 meters
5 cores RL: Angled connector type 5M: 5 meters
(Other length could be customized)



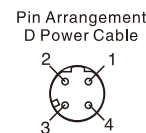
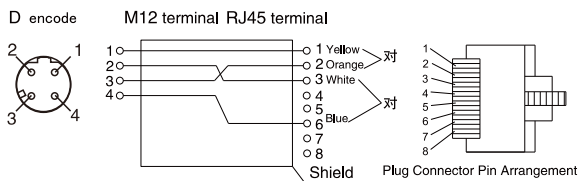
PN/EC/EP Bus cable (shielded)

ESV-EN - - - Identification code

Ethernet fieldbus wiring M12RJ: M12 male connectors → RJ45 2M: 2 meters Blank: Common cable
M12M12: M12 male connectors → M12 male connectors 5M: 5 meters TL: Flexible drag chain cable
(Other length could be customized)



Wiring diagram (through cable)



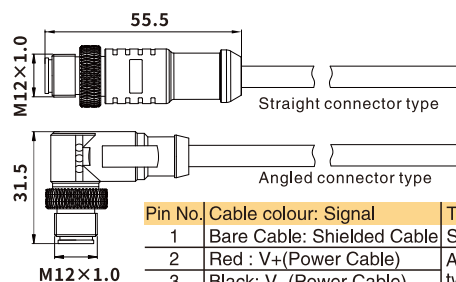
DN/CC/CP/DP Bus cable (shielded)

ESV - Protocol - -

DN: DeviceNet/CANopen 2M: 2 meters
CC: CC-Link 5M: 5 meters
DP: PROFIBUS DP (Other length could be customized)

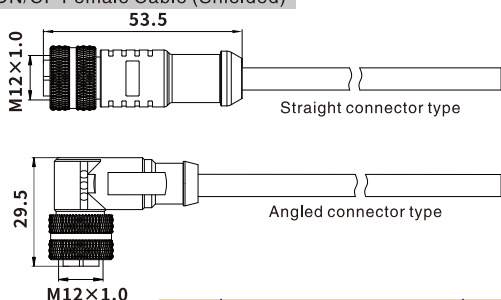
M12: M12 Female (Straight connector type)
M12L: M12 Female (Angled connector type)
M12F: M12 Male (Straight connector type)
M12FL: M12 Male (Angled connector type)
M12M12: M12 Male & Female (Straight connector type)
M12M12L: M12 Male & Female (Angled connector type)

DN/CP Male Cable (Shielded)



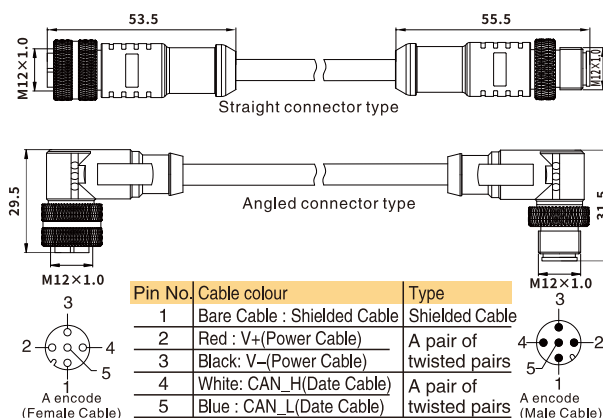
Pin No.	Cable colour: Signal	Type
1	Bare Cable: Shielded Cable	Shielded Cable
2	Red : V+(Power Cable)	A pair of twisted pairs
3	Black: V-(Power Cable)	A pair of twisted pairs
4	White: CAN_H(Date Cable)	A pair of twisted pairs
5	Blue : CAN_L(Date Cable)	A pair of twisted pairs

DN/CP Female Cable (Shielded)



Pin No.	Cable colour	Type
1	Bare Cable : Shielded Cable	Shielded Cable
2	Red : V+(Power Cable)	A pair of twisted pairs
3	Black: V-(Power Cable)	A pair of twisted pairs
4	White: CAN_H(Date Cable)	A pair of twisted pairs
5	Blue : CAN_L(Date Cable)	A pair of twisted pairs

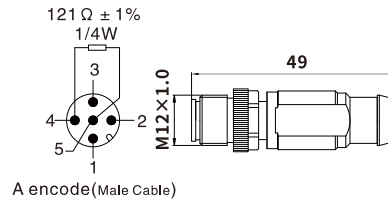
DN/CP Male & Female Cable (Shielded)



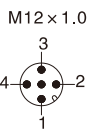
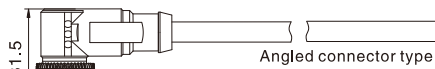
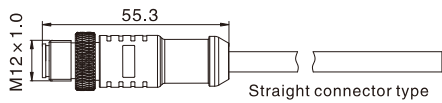
Pin No.	Cable colour	Type
1	Bare Cable : Shielded Cable	Shielded Cable
2	Red : V+(Power Cable)	A pair of twisted pairs
3	Black: V-(Power Cable)	A pair of twisted pairs
4	White: CAN_H(Date Cable)	A pair of twisted pairs
5	Blue : CAN_L(Date Cable)	A pair of twisted pairs

☉ Cable Ordering encode

DeviceNet terminal resistance



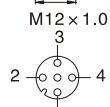
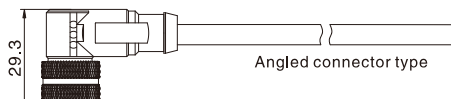
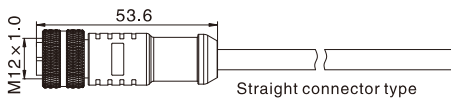
CC Male Cable (Shielded)



Pin No.	Cable colour: Signal	Type
1	Bare Cable: SLD	Shielded cable
2	White : DB	Signal cable
3	Yellow: DG	
4	Blue : DA	

A encode (Male Cable)

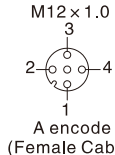
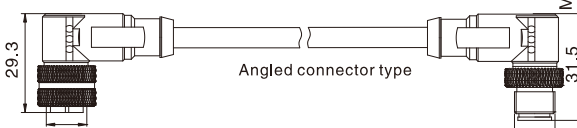
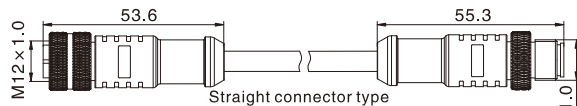
CC Female Cable (Shielded)



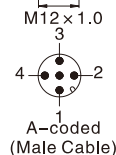
Pin No.	Cable colour: Signal	Type
1	Bare Cable: SLD	Shielded cable
2	White : DB	Signal cable
3	Yellow: DG	
4	Blue : DA	

A-coded (Female Cable)

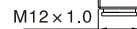
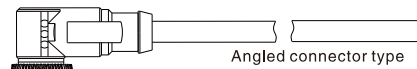
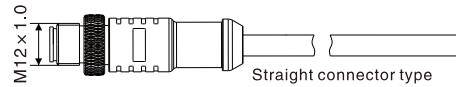
CC Male & Female Cable (Shielded)



Pin No.	Cable colour: Signal	Type
1	Bare Cable: SLD	Shielded cable
2	White : DB	Signal cable
3	Yellow: DG	
4	Blue : DA	



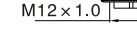
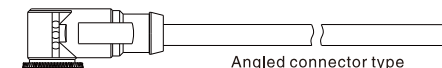
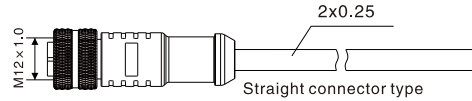
DP Male Cable (Shielded)



Pin No.	Cable colour: Signal
1	: Unused
2	Green: RXD/TXD-N
3	: Unused
4	Red: RXD/TXD-P
5	: Unused

B encode (Male Cable)

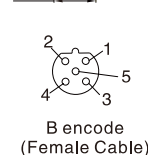
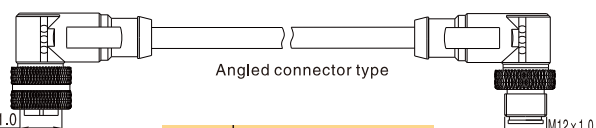
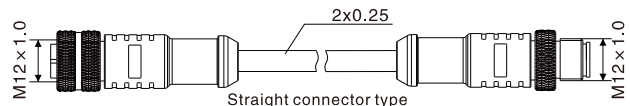
DP Female Cable (Shielded)



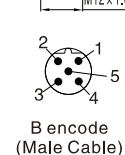
Pin No.	Cable colour: Signal
1	: Unused
2	Green: RXD/TXD-N
3	: Unused
4	Red: RXD/TXD-P
5	: Unused

B-coded (Female Cable)

DP Male & Female Cable (Shielded)



Pin No.	Cable colour: Signal
1	: Unused
2	Green: RXD/TXD-N
3	: Unused
4	Red: RXD/TXD-P
5	: Unused

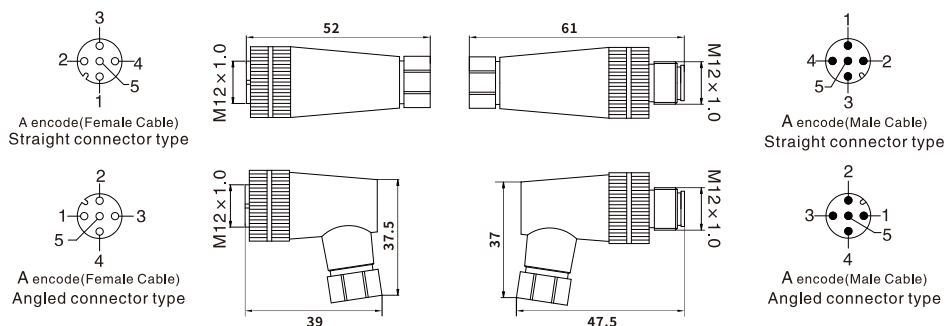


☉ Cable Ordering encode

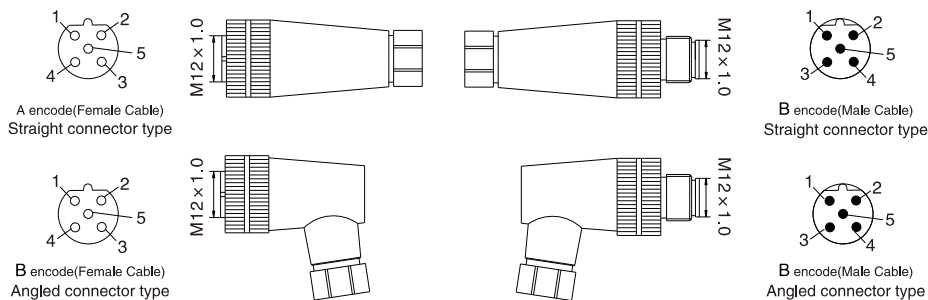
5-Cores Connector(M12-A encode)

M125	□	-	□
5-Cores Connector (M12-A Code)	R:Rotating Female Head(Straight connector type) RL:Rotating Female Head(Angled connector type) RF:Rotating Male Head(Straight connector type) RFL:Rotating Male Head(Angled connector type)		Blank: A encode B: B encode

M12-A encode



M12-B encode



☉ Status LED Indicator

PROFIBUS DP

BF ○ ○ SF

SD ○ ○ RD

PWR ○ ○ PWR(V)

Status Indicator	BF	SF	Meaning
	Off	Off	Normal internet communication
	Red Light On	Off	Unable to detect baud rate
	Red light flash	Off	Baud rate detected but not addressed by master
	Off	Red Light On	Internal error (no load voltage,voltage out of range)
	Red Light On	Red Light On	Address out of range
	Red light flash	Red Light On	DP master sending parameters do not match local parameters
Data Interaction Indicator	SD	RD	Meaning
	Off	Off	No data interaction
	Green Light On	Green Light On	Have data interaction
Power Indicator	PWR	PWR(V)	Meaning
	Off	Off	System without power supply
	Green Light On	Red light flash	Lload without power supply
	Red Light On	Green Light On	System voltage is higher than 26.4V
	Red light flash	Green Light On	System voltage is below 21.6V
	Green Light On	Red Light On	Load voltage is higher than 26.4V
	Green Light On	Red light flash	Load voltage is below 21.6V
	Green Light On	Green Light On	Normal module power supply

◎ Status LED Indicator

PROFINET

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

EtherNet/IP

NS ○ ○ MS
L/A1 ○ ○ L/A2
PWR ○ ○ PWR(V)

EtherCAT

RUN ○ ○ ERR
L/A1 ○ ○ L/A2
PWR ○ ○ PWR(V)

Indicator	Status	Meaning
BF	Red light on	Communication not connected, IP address or device name are duplicated.
	Green light flash	Module is connecting with PN master station, no module address assigned
	Green light on	System is normal
SF	Green light on	System is normal
	Green light flash	short circuit, open-circuit, reverse polarity, count limited
L/A1	Yellow light on	BUS1 PROFINET internet connection
	Off	BUS1 no internet connection
L/A2	Yellow light flash	BUS1 internet communication is normal
	Off	BUS2 no internet connection
PWR	Yellow light on	BUS2 PROFINET internet connection
	Off	BUS2 no internet connection
	Yellow light flash	BUS2 internet communication is normal
	Off	Module without power supply
PWR(V)	Green light on	Module with 24V power supply
	Red light on	Module overvoltage
	Green light flash	Module undervoltage
	Off	Load without power supply
PWR(V)	Green light on	Load with 24V power supply
	Red light on	Load overvoltage
	Green light flash	Load undervoltage
	Off	Load without power supply

Indicator	Status	Meaning
NS	Off	No power supply or no module address assigned
	Red light flash	EtherNet/IP timeout
	Green light on	EtherNet/IP no communication connection
MS	Green light on	System is normal
	Red light flash	short circuit, open-circuit, reverse polarity, count limited
	Green light on	System is normal
L/A1	Yellow light on	BUS1 EtherNet/IP internet connection
	Off	BUS1 no internet connection
	Yellow light flash	BUS1 internet communication is normal
L/A2	Yellow light on	BUS2 EtherNet/IP internet connection
	Off	BUS2 no internet connection
	Yellow light flash	BUS2 internet communication is normal
PWR	Off	Module without power supply
	Green light on	Module with 24V power supply
	Red light on	Module overvoltage
	Red light flash	Module undervoltage
PWR(V)	Off	Load without power supply
	Green light on	Load with 24V power supply
	Red light on	Load overvoltage
	Green light flash	Load undervoltage

Indicator	Status	Meaning
RUN	Off	Initial status
	Green light flash	Pre-operation or safe operation
	Green light flash	Normal working status
ERR	Off	Initialization normal
	Red light flash	Initialization fail
L/A IN	Green light on	BUS1 EtherCAT internet connection
	Off	BUS1 no internet connection
	Green light flash	BUS1 internet communication is normal
L/A OUT	Green light on	BUS2 EtherCAT internet connection
	Off	BUS2 no internet connection
	Green light flash	BUS2 internet communication is normal
PWR	Off	Module without power supply
	Green light on	Module without power supply
	Red light on	Module overvoltage
	Red light flash	Module undervoltage
PWR(V)	Off	Load without power supply
	Green light on	Load with 24V power supply
	Red light on	Load overvoltage
	Red light flash	Load undervoltage

DeviceNet

NS ○ ○ MS
PWR ○ ○ PWR(V)

CC-Link

RUN ○ ○ ERR
SD ○ ○ RD
PWR ○ ○ PWR(V)

CANopen

MS ○ ○ NS
IO ○ ○ SD
PWR ○ ○ PWR(V)

Indicator	NS	MS	Meaning
	Off	Off	Network Power Supply
	Off	Red Light on	Offline, the watchdog timer is incorrect
	Off	Red light flash	The parameter is in -correctly written
	Red Light on	Green Light on	Bus off, MAC ID repeated
	Red light flash	Green light flash	The IO connection times out
	Green light on	Green light on	Normal Communication

Indicator	PWR	PWR(V)	Meaning
	Off	Off	Module is not powered on
	Green Light on	Red light flash	Load is not powered on
	Red light on	Green Light on	Module Overvoltage
	Red light flash	Green Light on	Module Undervoltage
	Green Light on	Red light on	Load Overvoltage
	Green Light on	Red light flash	Load Undervoltage
	Green Light on	Green Light on	Normal Communication

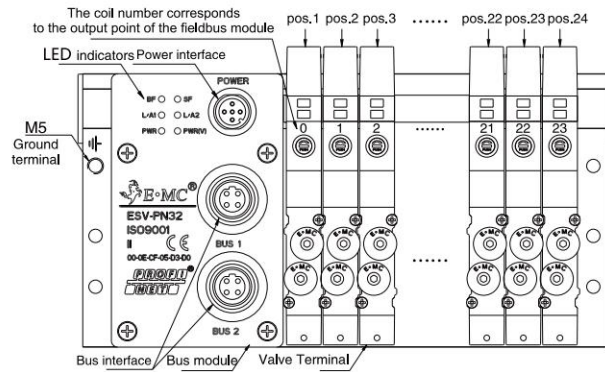
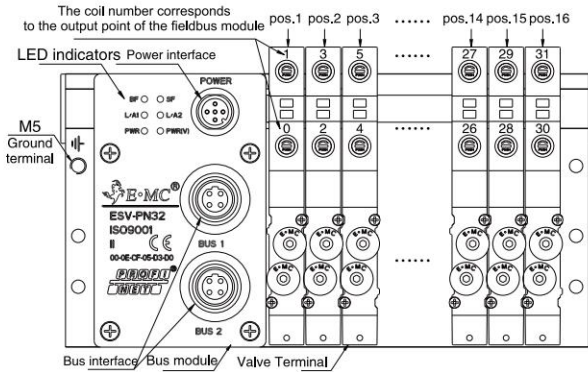
Indicator	Status	Meaning
RUN	Green light on	normal internet connection
	Off	no internet connection
ERR	Red light on	abnormal internet communication
	Red light flash	The station number setting and baud rate were changed in the communication
SD	Off	normal internet communication
	Green light on	normal data transmission
RD	Off	No data interaction or data sending exception
	Green light on	normal data reception
PWR	Off	No data interaction or Data reception exception
	Green light on	Module without power supply
	Off	Module without power supply
	Red light flash	Module undervoltage
PWR(V)	Red light on	Module overvoltage
	Off	Module with 24V power supply
	Green light on	Load with 24V power supply
	Off	Load without power supply
PWR(V)	Red light flash	Load undervoltage
	Red light on	Load overvoltage
	Green light on	Load undervoltage
	Off	Load undervoltage

Indicator	Color	Status	Meaning
MS	Green	on	Normal module operation
		off	Abnormal module or Abnormal power
NS	Red	on	Bus not operating, not connected stop, Node 0 or 127
		on	Communication failure
		off	Normal communication
		on	Running mode
IO	Green	Rapid Flash	Prerunning mode
		Slow Flash	Bus interruption attempt to reconnect or change nodes while running, baud rate
		off	Bus not operating, not connected or stop
SD	Green	Flash	Normal data transmission
		off	No data transmission
PWR	Green	on	Normal control power supply
		off	Abnormal control power supply
		on	Control power overvoltage
		off	Control power undervoltage
PWR(V)	Red	Flash	Normal control power supply
		off	Normal control power supply
		on	Normal load power supply
		off	Abnormal load power supply
PWR(V)	Red	on	Load power supply overvoltage
		off	Load power supply undervoltage
		SlowFlash	Load power supply reversed
		Rapid Flash	Load power supply reversed
		off	Auxiliary power supply is normal

Fieldbus module wiring diagram—ESV-PN/EC/EP/DN/CC/CP/DP Series

Dual electric control (32 points max. 16 bits, 48 points max. 24 bits)

Single control(max.24 positions)

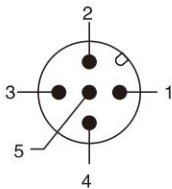


ESV-LK Series

Power interface

Status LED Indicator

Power Interface (M12, A encode, Class B)



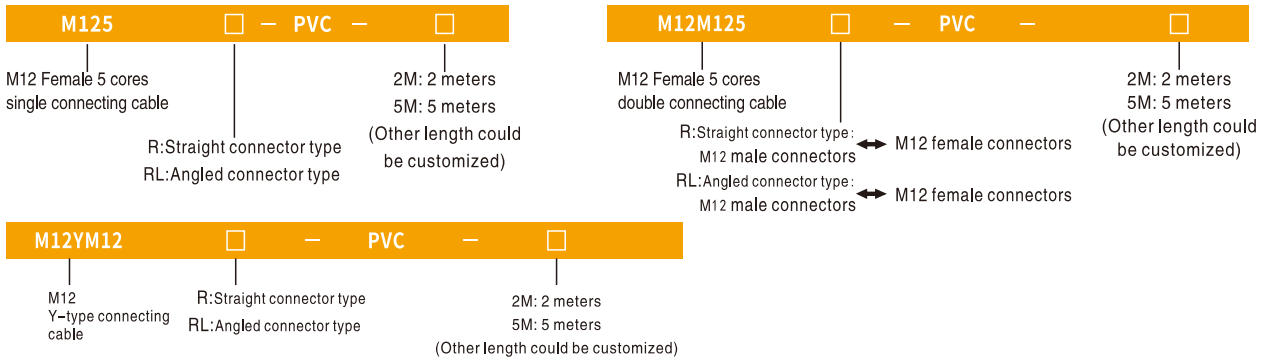
Pin No.	Type	Description
1	PS24	+24V Control voltage
2	PL24	+24V Operating voltage of load valve
3	PS0	0V Control voltage
4	C/Q	Data communication (IO-Link)
5	PL0	0V Operating voltage of load valve

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

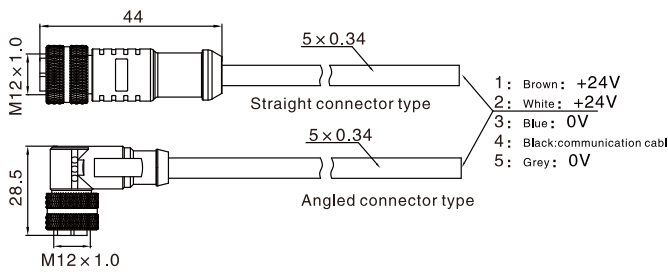
Specifications

Model	ES1V(VM/VB)-LK16 ES2V(VM/VB)-LK16	ES1V(VM/VB)-LK32 ES2V(VM/VB)-LK32	ES1V(VM/VB)-LK48 ES2V(VM/VB)-LK48
Output	16	32	48
Protocols	IO-Link		
Baud rate	COM2 (38.4kbps)		
Configuration files	IODD file		
Specification	V1.1		
Output Voltage	DC24V(DC21.6~26.4V)		
Current consumption	25mA below		
Output power supply voltage (valve)	DC24V(DC22.8 ~ 26.4V)		
Power interface	M12, 5pin, A encode		
Type	Class B		
Diagnostic	System diagnosis,communication error,short circuit protection		
Protection	IP40		
Storage temperature	-20 ~ 70℃		
Working temperature	-10~50℃		

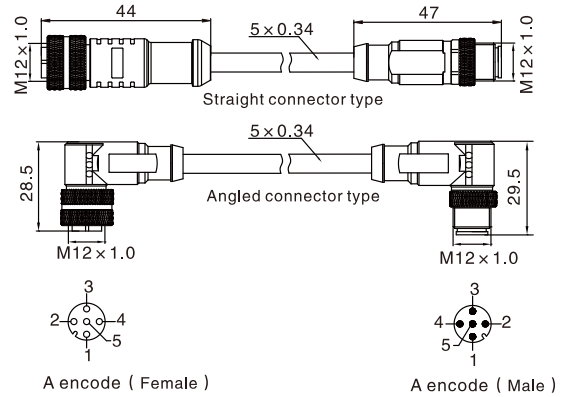
○ Cable Ordering Code



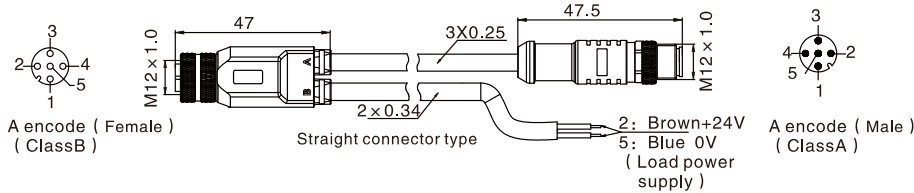
Single connecting cable (Class B)



Double connecting cable (Class B)

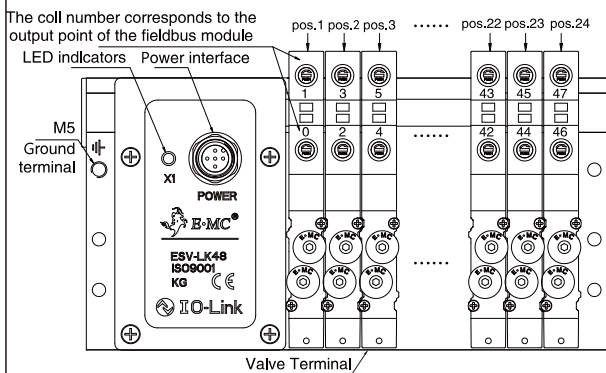


Y-type connecting cable (Class A & Class B)

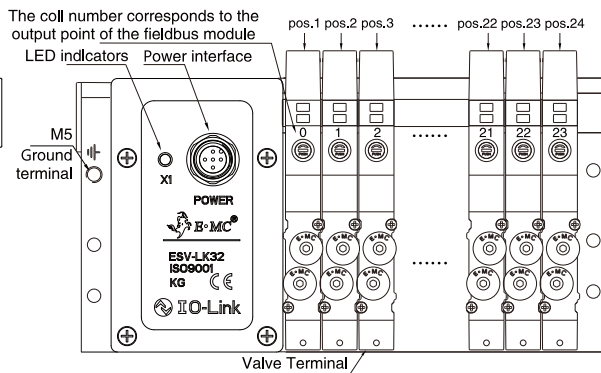


○ Wiring diagram—ESV-LK Series

Wiring for double (Max 24 positions)



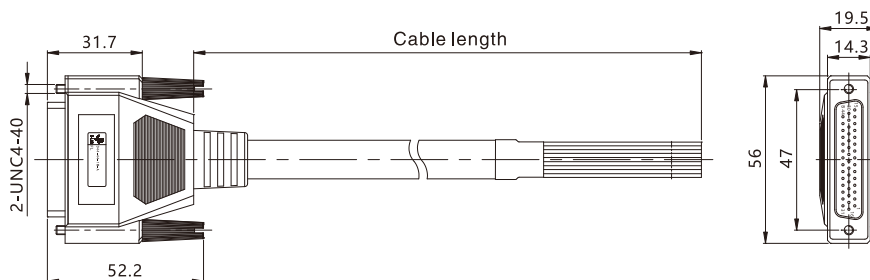
Wiring for single control (Max 24 positions)



Precautions for Use

1. Do not disassemble, modify (including replacing printed circuit boards) or repair without authorization, which may cause injury or failure.
2. Do not operate the product exceeding the parameters (limited values), and do not use it for flammable or harmful liquids, which may cause fire, malfunction or damage to the product. Please verify the manual before using.
3. Do not operate in an environment containing flammable and explosive gases, which may cause fire or explosion. This product is not designed of explosion-proof.
4. If use this product in the interlock circuit: (1) Provide double interlocking systems, such as mechanical system; (2) Check the products regularly, avoid accidents by malfunctions.
5. The following instructions must be followed during maintenance: (1) turn off the power; (2) stop providing air, remove the remaining pressure and make sure that there is no air supply before maintenance; otherwise, it may cause injury.
6. After the maintenance is completed, check the functions properly. If the equipment does not work properly, please stop the operation. In case of unexpected failure, safety cannot be guaranteed.
7. The product designed used for industries. Except under industrial environments, when used under environments such as: mixed commercial and residential areas, measures must be taken to prevent radio interference.
8. The bus manifold and power cord must be functionally grounded to ensure the safety and anti-noise performance of the fieldbus system.
9. IO-Link valve terminal provide the operating voltage through the B-type port, normally, please provide power separately when A-type port used.

Connector Cable



Connector Cable Terminal Diagram	PIN number & Wire color							
	Pin No.	D44-44 wire color	Pin No.	D44-44 wire color	Pin No.	D44-44 wire color	Pin No.	D44-44 wire color
	1	orange	12	purple with 1 point	23	blue with 2 points	34	white with 3 points
	2	orange with 1 point	13	purple with 2 points	24	blue with 3 points	35	white with 4 points
	3	orange with 2 points	14	purple with 3 points	25	blue with 4 points	36	grey
	4	orange with 3 points	15	purple with 4 points	26	brown	37	grey with 1 point
	5	orange with 4 points	16	black	27	brown with 1 point	38	grey with 2 points
	6	pink	17	black with 1 point	28	brown with 2 points	39	grey with 3 points
	7	pink with 1 point	18	black with 2 points	29	brown with 3 points	40	grey with 4 points
	8	pink with 2 points	19	black with 3 points	30	brown with 4 points	41	yellow
	9	pink with 3 points	20	black with 4 points	31	white	42	yellow with 1 point
	10	pink with 4 points	21	blue	32	white with 1 point	43	red (COM)
	11	purple	22	blue with 1 point	33	white with 2 points	44	green (COM)

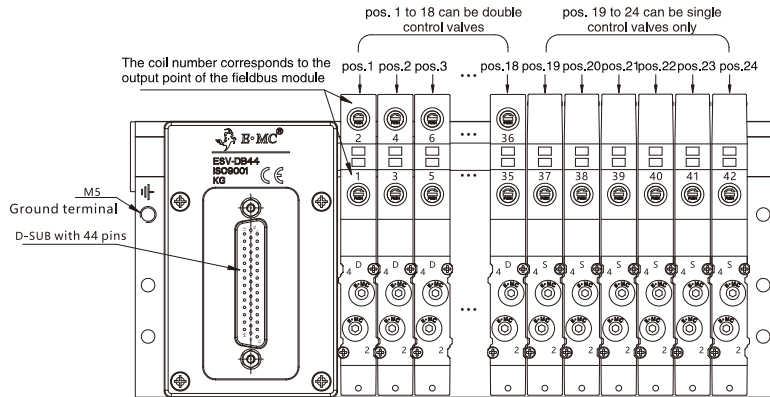
Note: PIN number from 1 to 36 pins can use double control valves, PIN number from 37 to 42 pins can use single control valves only (18 pcs double control valves, 6 pcs single control valves)

Cable Ordering Code

Connect Types	Wires In Cable	Cable Length	A
D44: D-SDB connector with 44 pins	44: 44 wires (42 coils or less)	1M: 1 meters 2M: 2 meters 3M: 3 meters (Other length could be customized)	

ESV-DB44 Valve Terminal Inner Wiring Diagram

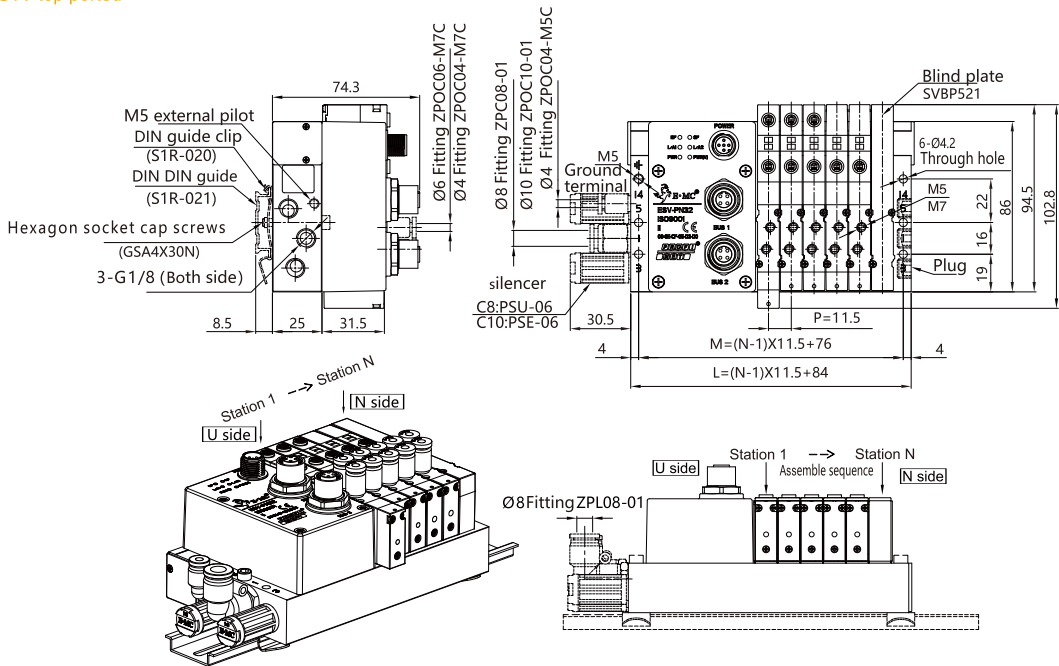
Wiring diagram of mixed single/double control (control 42 coils maximum and 24 valve stations maximum, suitable for 13 to 18 pcs double control valves, when the coils is more than 36, station 19 to 24 can be single control valves only)



Main Dimension

ES1V Valve Terminal

ES1V top ported

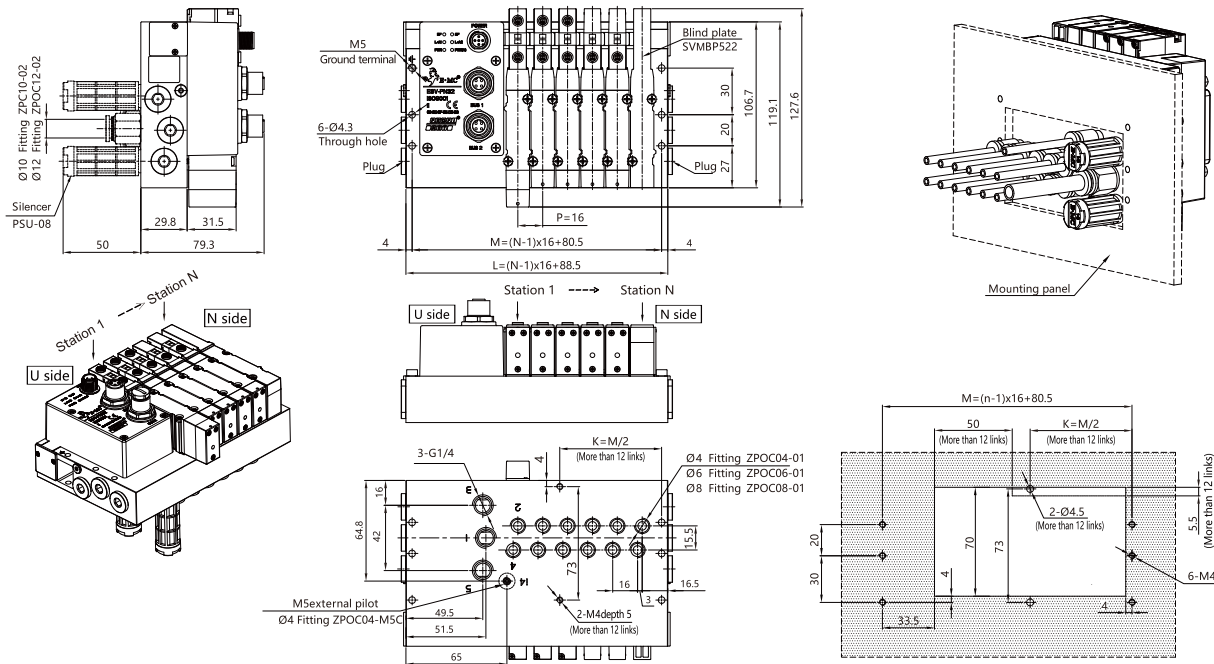


Note: N means valve link

Model	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Sign L	95.5	107	118.5	130	141.5	153	164.5	176	187.5	199	210.5	222	233.5	245	256.5	268	279.5	291	302.5	314	325.5	337	348.5
Sign M	87.5	99	110.5	122	133.5	145	156.5	168	179.5	191	202.5	214	225.5	237	248.5	260	271.5	283	294.5	306	317.5	329	340.5

○ Main Dimension

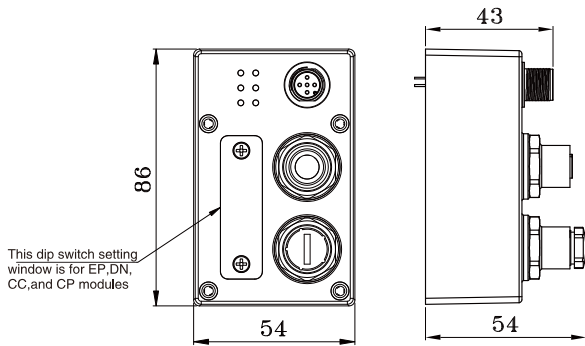
ES2VB bottom ported



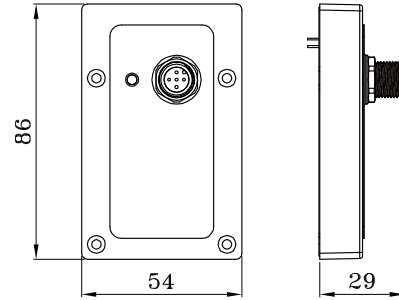
Model	2	3	4	5	6	7	8	9	10	11	12		
Sign	L	104.5	120.5	136.5	152.5	168.5	184.5	200.5	216.5	232.5	248.5	264.5	
	M	96.5	112.5	128.5	144.5	160.5	176.5	192.5	208.5	224.5	240.5	256.5	
Model	13	14	15	16	17	18	19	20	21	22	23	24	
Sign	L	280.5	296.5	312.5	328.5	344.5	360.5	376.5	392.5	408.5	424.5	440.5	456.5
	M	272.5	288.5	304.5	320.5	336.5	352.5	368.5	384.5	400.5	416.5	432.5	448.5
	K	136.25	144.25	152.25	160.25	168.25	176.25	184.25	192.25	200.25	208.25	216.25	224.25

Note: N means valve link

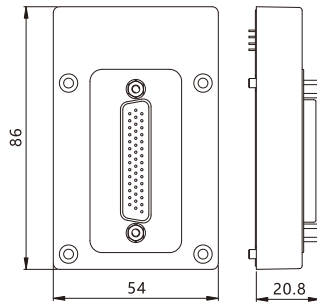
Dimensions of Control Module



PN/EC/EP/DN/CC/CP Protocol control module



IO-Link Protocol control module



DB44 dimensions

Note: The valve terminal dimensions of ESV-DB44/LK/EC/PN/EP/DN/CC/CP are same ,except the modules.