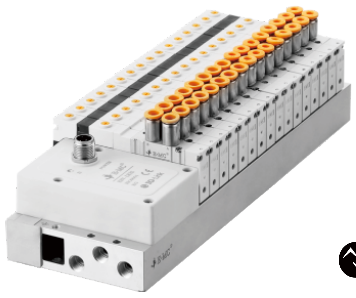
ESVT

Fieldbus Valve Terminal (IP65 Class)

CC-Link
EtherCAT
PROFINET
EtherNet/IP
PROFIBUS
CANopen



IO-Link

Product Features

- Compatible Protocols:CC–Link、EtherCAT、PROFINET、EtherNet/IP、Profibus–DP、CANopen.
- 32 output control 32 coil /16 dual control valve positions; 48 output control 48 coil/24 dual control valve positions.
- Equipped with two M12 BUS Interface, realize daisy–chain wiring communication, branch connector is not neccessary.
- 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?

ESV Fieldbus Valve Terminal

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

- Series No. Body Size: ES: Fieldbus valve terminal; ESN: Energy–saving Fieldbus valve terminal
- Piping Type: V: Top ported; VM: Side ported; VB: Bottom ported
- Identifucation: T
- Communication Protocol: 1: 1 series; 2: 2 series
- Qty: Valve quantity for different port
- Voltage: E4: DC24V
- Pilot Type: Blank:Interal pilot; WB:External pilot①
- Manual Button: Blank: Press & Rotate Lock; H: Without Lock
- Wiring Type: Blank: Double control wiring (max.24 links)
- Manifold Port: Blank: Without accessories; D: With DIN rail clip and 1M guide rail; D0: With DIN rail clip, no guide rail; DIN guide rail packed separately (if order with guide rail, the guide rail will be packed separately)
- Mounting: Blank: G
- Thread Type

Protocols type	Communication Protocol	Output	Max Valve Quatity
EC32	EtherCAT	32	16
EC48		48	24
PN32	PROFINET	32	16
PN48		48	24
EP32	EtherNet/IP	32	16
EP48		48	24
CC32	CC–Link	32	16
CC48		48	24
DP32	Profibus–DP	32	16
DP48		48	24
CP32	CANopen	32	16
CP48		48	24
LK32	IO–Link	32	16
LK48		48	24
DB25	D–SUB25	24	12
DB44	D–SUB44	42	21

Servis	Coding	Port size	Remark
1 Series	M5	M5 port	assembly sequence, 1st link start from U side
	C4	Ø4 one–touch fitting(ZPOC04–M7C)	
	M7	M7 port	
	C6	Ø6 one–touch fitting(ZPOC06–M7C)	
2 Series	06	1/8 port	
	C4	Ø4 one–touch fitting(ZPOC04–01G)	
	C6	Ø6 one–touch fitting(ZPOC06–01G)	
	C8	Ø8 one–touch fitting(ZPOC08–01G)	

Code	Exhaust air inlet			Remark
	Muffler, Fitting Specification	1 Series	2 Series	
Blank	Both side without silencer, fitting, plug	–	–	1. Install a plug on the other side of the selected air inlet. 2. Bottom receiver type is available only for U–side and U1–side.
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,POC fitting	Ø10	Ø12	
N1	Station N with silencer, POC fitting			
UN1	Both side with silencer, POC fitting			

Code	Function	Remark
S	5/2 single	The number of valve positions is first from the 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.)	
YK①	2pcs 3/2 (N.C.) spring return	
HK①	2pcs 3/2 (N.O.) spring return	
UK①	2pcs 3/2 (N.O./N.C.) spring return	
B	blind plate	
TA	port 1 air supply pressure separate	
TG	port 3/5 air exhaust pressure separate	
TL	port 1/3/5 air supply & exhaust pressure separate	
N	air supply & exhaust moudle	

Note

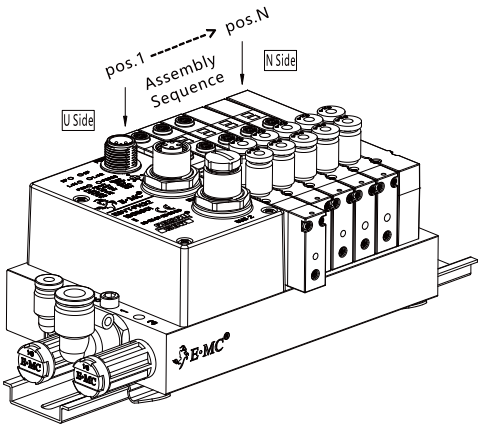
1、①Y/H/U is not available for external pilot due to the air return. YK/HK/UK is available for external pilot due to the spring return.

2、Pressure separate is same as SV series .

Order Example:

1、1. Same valve: ES Fieldbus Valve Terminal, 1 series body, top ported,Identification T, PROFINET,32 outputs, 6 links5/2 double controled SVT5212, port size M5, DC24V, G thread, internal pilot, double control wiring, both sidewithout silencer, fitting, plug, the ERP codeis ES1VT–PN32–6D–M5E4.

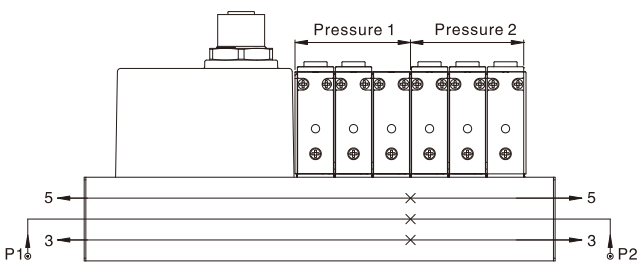
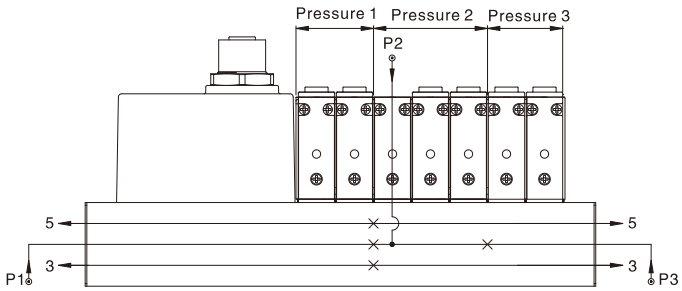
2、Mix different valves: ES series fieldbus terminal, 1 series body, top ported, PROFINET, 32 outputs see right picture : station 1 is 5/3 center closed SVT5312C, station 2 is 5/2 double control SVT5212, station 3 is 2X3/2 (N.0.) spring return SVT5412HK ,station 4 & station 5 are 5/2 single SVT5211,station 6 is blind plate. station 1 & 2 with 06 one–touch fitting ZPOC06–M7C, station 3–5 with with04 one–touch fitting ZPOC04–M7C,DC24V,G thread, external pilot, double control wiring, U–subside with silencer, 08 one–touch fitting EPL, with DIN rail clip and 1M guide rail.the ERP codeis ES1VT–PN32–CDHK2SB–2C63C4E4–WB–UL–D.



3、Mix diferent valve with pressure separate: ES series valve termina, 1 series body,top ported, PROFINET protocol,32 outputs,see right picture : station 1 is 5/3 center closed SVt5312C, port 1 air supply pressure separate between staion 1 and station 2,staion 2 is 5/2 double control SVT5212, station 3 is air supply & exhaust module ,staion 4 is 2X3/2 (N.0.) SVT5412H, port 1,3,5 air supply pressure separate between station 4 and stalion 5, staion 5 is 5/2 single SVT5211, stalion 6 is blind plate,working por is M7 , DC24v, internal pilot, double control wiring, both sides without silencer,fittings ,plugs, G thread, the ERP code is ES1Vt–PN32–CTADNHTLSB–M7E4.

Explain Of Pressure Separate

1、Create pressure zones by using pressure zone blocks at different positions between valve positions inside the inlet/exhaust ports of the manifold;
2、Pressure zones are applicable to 1 inlet and 3/5 exhaust ports;
3、Each pressure zone uses at least one gas source (or inlet and exhaust module).

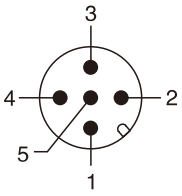
Diagram of pressure separate	Explain of pressure separate
	different options for pressure separate TA：port 1 air supply pressure separate  TG：port 3/5 air exhaust pressure separate  TL：port 1/3/5 air supply & exhaust pressure separate 
	1. 1pc Air supply & exhaust module requests 1 station 2. Use air supply & exhaust module to control the third or more different pressure and exhaust. 3. External pilot port 14 is not available for pressure separate.

ESVT-PN/EC/EP/DP/CC/CP Series

Specifications

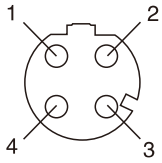
Model		ES1V(VM/VB)T–PN32/48 ES2V(VM/VB)T–PN32/48	ES1V(VM/VB)T–EC32/48 ES2V(VM/VB)T–EC32/48	ES1V(VM/VB)T–EP32/48 ES2V(VM/VB)T–EP32/48	ES1V(VM/VB)T–DP32/48 ES2V(VM/VB)T–DP32/48	ES1V(VM/VB)T–CC32/48 ES2V(VM/VB)T–CC32/48	ES1V(VM/VB)T–CP32/48 ES2V(VM/VB)T–CP32/48
Protocols		PROFINET	EtherCAT	EtherNet/IP	Profibus–DP	CC–Link	CANopen
Configuration files		GSDML file	XML file	EDS file	GSD file	CSP+file	EDS file
Outputs		32/48					
Baud rate		100Mbps			9.6/19.2/93.75/187.5/500Kbps /1.5/3/6/12Mbps self suit	156/625kbps/2.5/5/10Mbps	10/20/50/125/250/500/800/1000Kbps
Control power supply	Voltage	DC24V(DC21.6 ~ 26.4V)					
	Current consumption	120mA or less			50mA or less		
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, B encode	M12 pin +M12 socket, 5 holes, A encode	
Diagnostic		system diagnosis,communication error,short circuit protection,open circuit inspection, opposite connection protection , undervoltage and overvoltage diagnosis					
Protection		IP65					
Storage temperature(℃)		–20 ~ 70℃					
Working temperature(℃)		–10 ~ 60℃					

Power interface



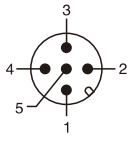
Pin	Type	Description
1	PS24	+24V Control voltage +24V
2	PL24	+24V Operating voltage of load valve
3	PS0	0V Control voltage 0V
4	PL0	0V Operating voltage of load valve
5	FE	Grounding

PN/EC/EP Bus Interface

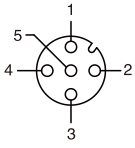


Pin	Type	Description
1	TD+	Send data+
2	RD+	Receive data+
3	TD–	Send data–
4	RD–	Receive data–

DN/CC/CP Bus Interface

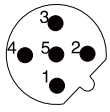


BUS IN

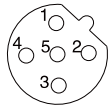


BUS OUT

DP Bus Interface



BUS IN



BUS OUT

CC

Pin	Type	Description
1	SLD	Blocking
2	DB	Data Exchange
3	DG	
4	DA	
5	Blank	Unused

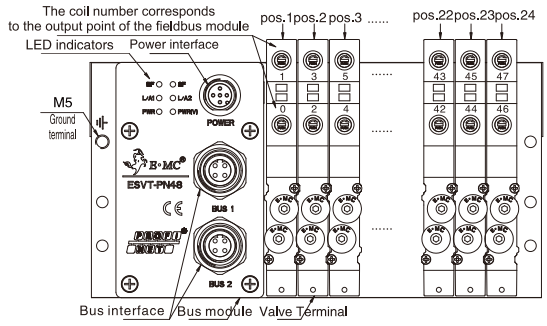
CP

Pin	Type	Description
1	CAN_SHLDV+	CAN Shield(option)
2	CAN_V+	24V+
3	CAN_GND	CAN Groud Connection
4	CAN_H	High level signal
5	CAN_L	Low level signal

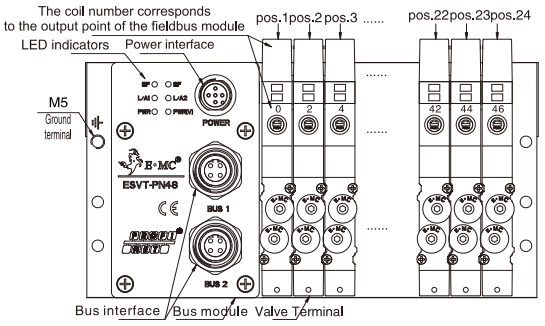
Pin	BUS IN	BUS OUT	Description
1	–	VP(P5V)	Voltage +5V
2	Rxd / TxD–N	RxD/TxD–N	Data cable A
3	–	DGND(M5V)	Data ground
4	Rxd / TxD–P	RxD/TxD–P	Data cable B
5	FE	FE	Functional ground

Wiring diagram ESVT-PN/EC/EP/DP/CC/CP Series

Wiring for double control(Max 16 positions for 32 Output; Max 24 positions for 48 output)



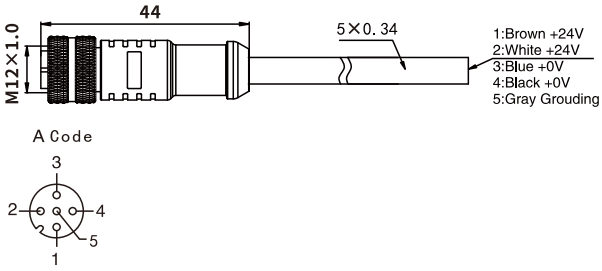
wiring for single control(Max 16 positions for 32 Output; Max 24 positions for 48 output)



Cable Ordering Code

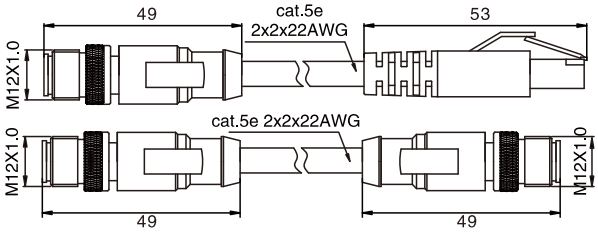
PN/EC/EP/CC/CP/DP Power Cable (Unshielded)

M125	□	–	PVC	–	□
M12 Female 5 cores	R: Straight–through type RL: Rectangular type				2M:2 meters 5M:5 meters (Other length could be customized)

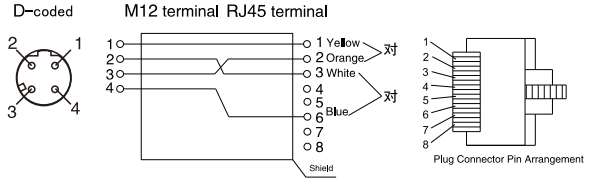


PN/EC/EP Bus cable (shielded)

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)



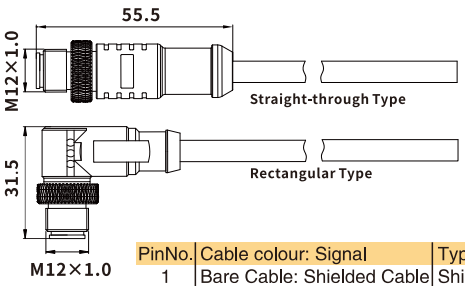
Wiring diagram (through cable)



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

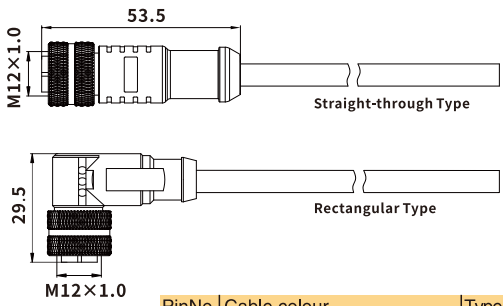
ESV	–	Protocol	–	□	–	□
DN: DeviceNet/CANopen CC: CC–Link DP: PROFIBUS DP				M12: M12 Female(Straight–through type) M12L: M12 Female(Rectangular type) M12F: M12 Male(Straight–through type) M12FL: M12 Male(Rectangular type) M12M12: M12 Male & Female(Straight–through type) M12M12L: M12 Male & Female(Rectangular type)		2M: 2 meters 5M: 5 meters (Other length could be customized)

DN/CP Male cable(shielded)



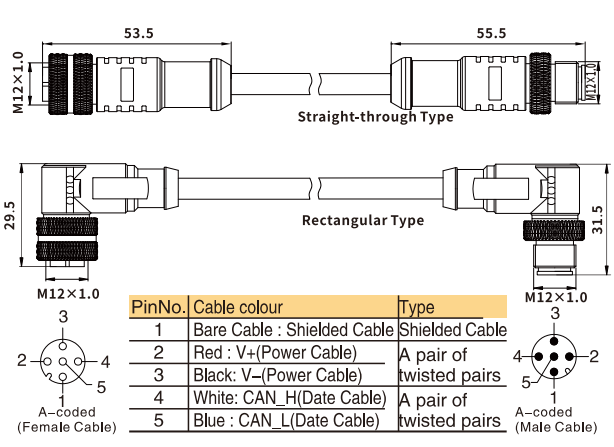
PinNo.	Cable colour: Signal	Type
1	Bare Cable: Shielded Cable	Shielded Cable
2	Red : V+(Power Cable)	A pair of twisted pairs
3	Black: V–(Power Cable)	
4	White: CAN_H(Date Cable)	A pair of twisted pairs
5	Blue : CAN_L(Date Cable)	

DN/CP Female Cable (Shielded)



PinNo.	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)	
4	White: CAN_H(Date Cable)	A pair of twisted pairs
5	Blue : CAN_L(Date Cable)	

DN/CP Male & Female Cable (Shielded)



PinNo.	Cable colour	Type
1	Bare Cable : Shielded Cable	Shielded Cable
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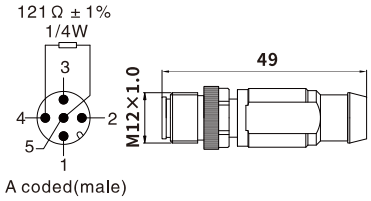
3	Black: V–(Power Cable)	
4	White: CAN_H(Date Cable)	A pair of twisted pairs
5	Blue : CAN_L(Date Cable)	

Cable Ordering Code

DeviceNet terminal resistance

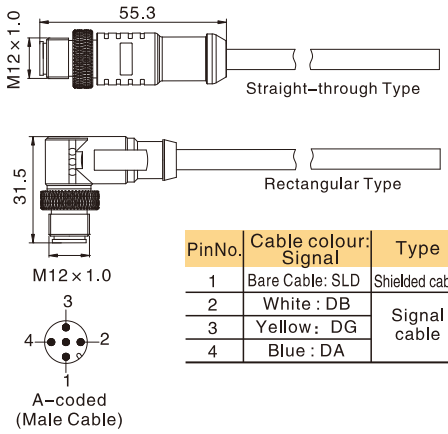
Series – Communication Protocol – R

ESV　DN：DeviceNet　R: terminal resistance



A coded(male)

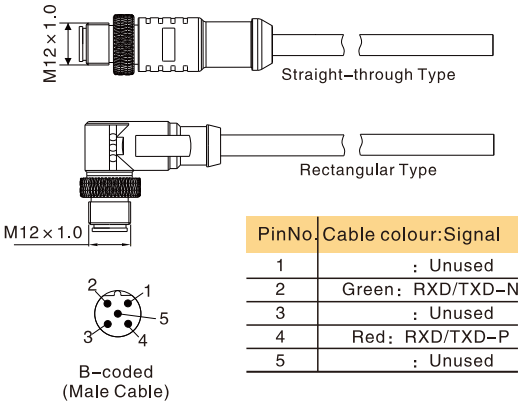
CC Male Cable (Shielded)



A–coded
(Male Cable)

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

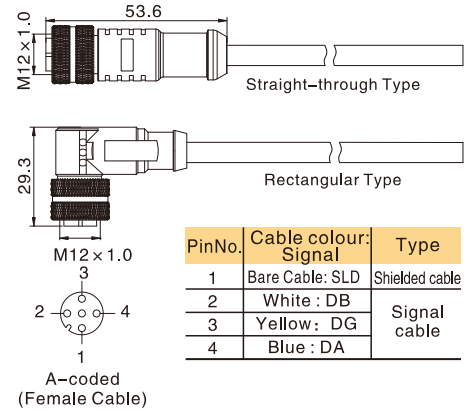
DP Male Cable (Shielded)



B–coded
(Male Cable)

PinNo.	Cable colour:Signal
1	： Unused
2	Green：RXD/TXD–N
3	： Unused
4	Red：RXD/TXD–P
5	： Unused

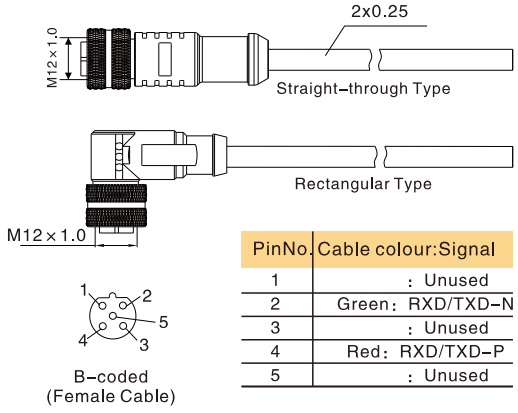
CC Female Cable (Shielded)



A–coded
(Female Cable)

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

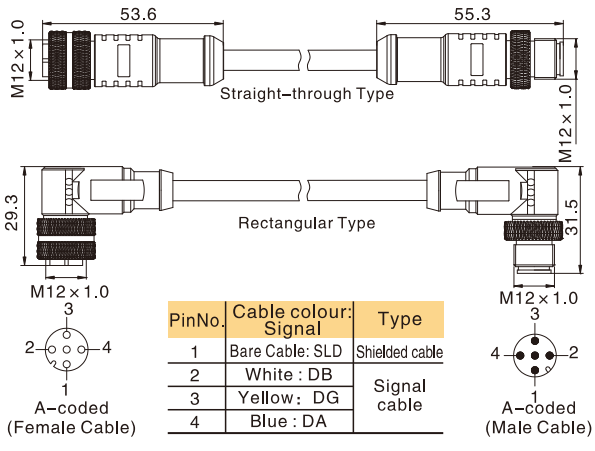
DP Female Cable (Shielded)



B–coded
(Female Cable)

PinNo.	Cable colour:Signal
1	： Unused
2	Green：RXD/TXD–N
3	： Unused
4	Red：RXD/TXD–P
5	： Unused

CC Male & Female Cable (Shielded)

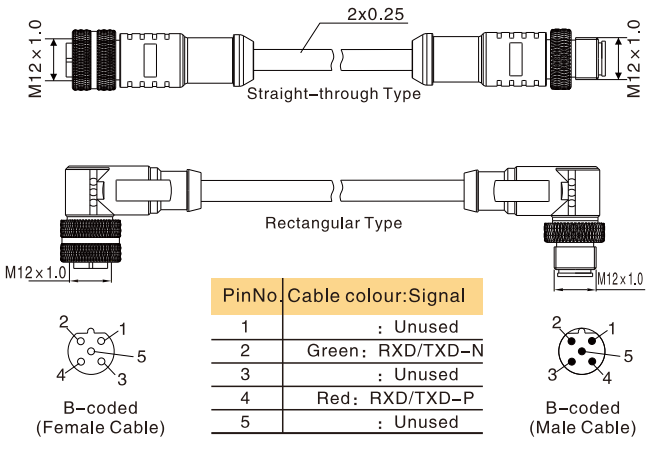


A–coded
(Female Cable)

A–coded
(Male Cable)

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

DP Male & Female Cable (Shielded)



B–coded
(Female Cable)

B–coded
(Male Cable)

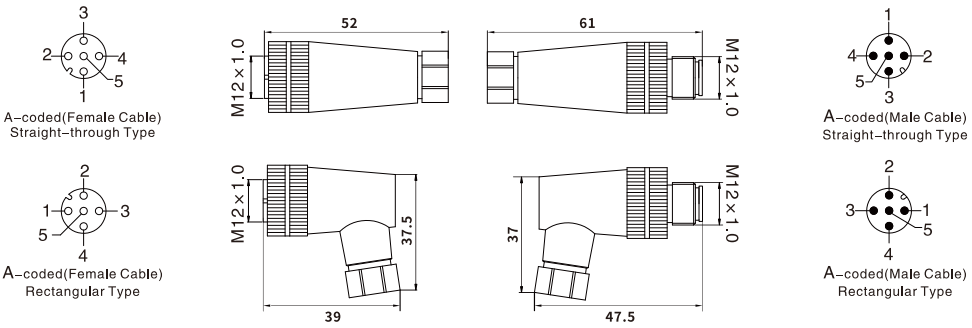
PinNo.	Cable colour:Signal
1	： Unused
2	Green：RXD/TXD–N
3	： Unused
4	Red：RXD/TXD–P
5	： Unused

Cable Ordering Code

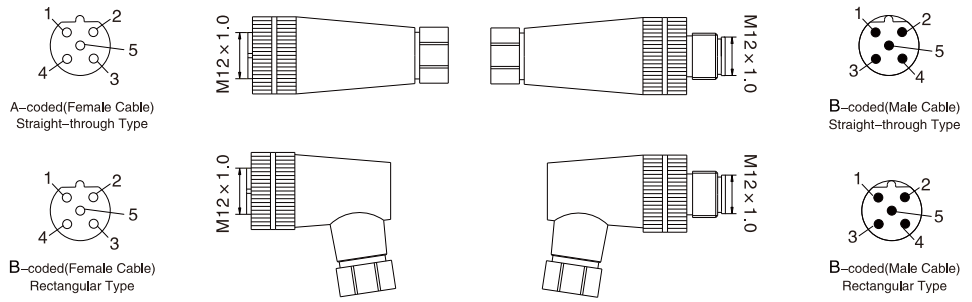
5–Cores Connector(M12–A Code)

M125	□	–	□
5–Cores Connector (M12–A Code)	R:Rotating Female Head(Straight–through Type) RL:Rotating Female Head(Rectangular Type) RF:Rotating Male Head(Straight–through Type) RFL:Rotating Male Head(Rectangular Type)		空白：A code B：B code

M12–A Code



M12–B Code



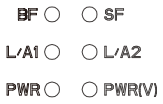
Status LED Indicator

PROFIBUS DP

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

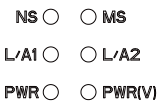
Status LED Indicator

PROFINET



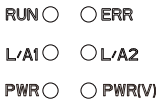
Indicator	Status	Meaning
BF	Red light on	Communication not connected,IP address or device name are duplicated.
	Green light flash	Module is connecting with PN master station,no module address assigned
	Green light on	System is normal
SF	Green light on	System is normal
	Green light flash	short cirsuit,open-circuit,reverse polarity,count limited
L/A1	Yellow light on	BUS1 PROFINET internet connection
	Off	BUS1 no internet connection
	Yellow light flash	BUS1 internet communication is normal
L/A2	Yellow light on	BUS2 PROFINET 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
	Green light flash	Module undervoltag
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

EtherNet/IP



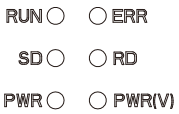
Indicator	Status	Meaning
NS	Off	No power supply or no module address assigned
	Red light flash	EtherNet/IP timeout
	Green light flash	EtherNet/IP no communication connection
	Green light on	System is normal
MS	Red light flash	short cirsuit,open-circuit,reverse polarity,count limited
	Green light on	System is normal
L/A1	Yellow light on	BUS1 EtherNet/IP internet connection
	Off	BUS1 no internet connection
	Yellow light flash	BUS1internet 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

EtherCAT



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

CC-Link



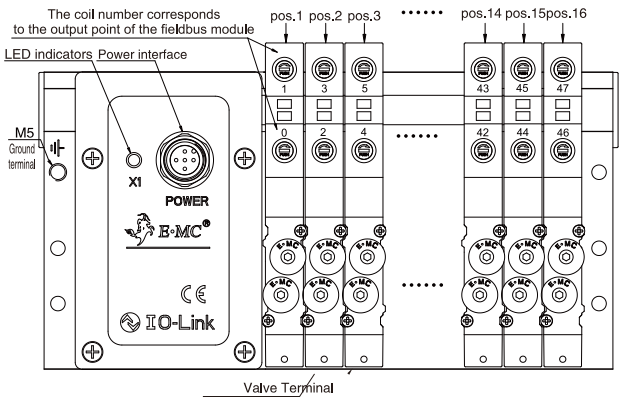
Indicator	Status	Meaning
RUN	Green light on	normal internet connection
	Off	no internet connection
ERR	Red light on	abnormal internet communication
	Red light flash	The station number setting and baud rate were changed in the communication
	Off	normal internet communication
SD	Green light on	normal data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

CANopen

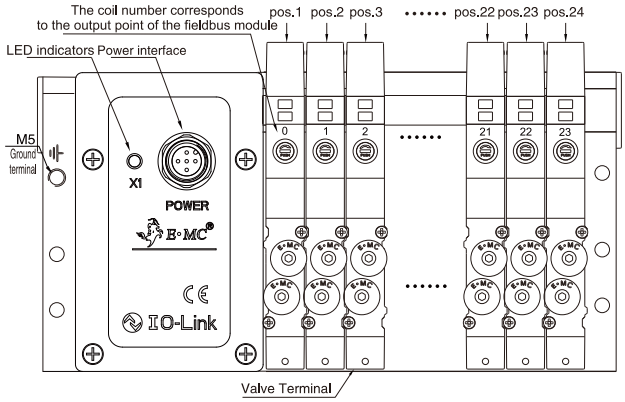
Indicator	Color	Status	Meaning
MS	Green	on	Normal module operation
		off	Abnormal module or Abnormal power
NS	Red	on	Bus not operating, not connectedor stop,Node 0 or 127
		on	Communication failure
		off	Normal communication
IO	Green	on	Running mode
		Rapid Flash	Prerunning mode
		Slow Flash	Bus interruption 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
	Red	on	Control power overvoltage
		Flash	Control power undervoltage
		off	Normal control power supply
PWR(V)	Green	on	Normal load power supply
		off	Abnormal load power supply
	Red	on	Load power supply overvoltage
		SlowFlash	Load power supply undervoltage
		Rapid Flash	Load power supply reversed
		off	Auxiliary power supply is normal

Wiring Diagram——ESV-LK Series

Wiring for double control(Max 16 positions for 32 Output; Max 24 positions for 48 output)



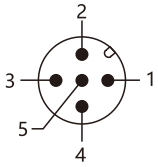
wiring for single control(Max 16 positions for 32 Output; Max 24 positions for 48 output)



ESVT-LK Series

Power interface

M12, A encode, 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
5	PL0	0V Operating voltage of load valve

LED Indicators

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

Code		ES1V(VM/VB)T–LK32 ES2V(VM/VB)T–LK32	ES1V(VM/VB)T–LK48 ES2V(VM/VB)T–LK48
Output		32	48
Protocols		IO–Link	
Baud rate		COM2 (38.4kbps)	
Configuration files		IODD file	
Specification		V1.1	
Output voltage	Voltage	DC24V(DC21.6～26.4V)	
	Current consumption	25mA below	
Output type		DC24V(DC22.8 ~ 26.4V)	
Power interface		M12, 5pin, A encode	
Type		Class B	
Diagnostic		System diagnosis,communication error,short circuit protection	
Protection		IP65	
Storage temperature		–20 ~ 70℃	
Working temperature		–10~60℃	

Cable Ordering Code

M125 □ — PVC — □

- M125: M12 Female 5 cores single connecting cable
- □: R:Straight connector type; RL:Angled connector type
- PVC
- □: 2M: 2 meters; 5M: 5 meters; (Other length could be customized)

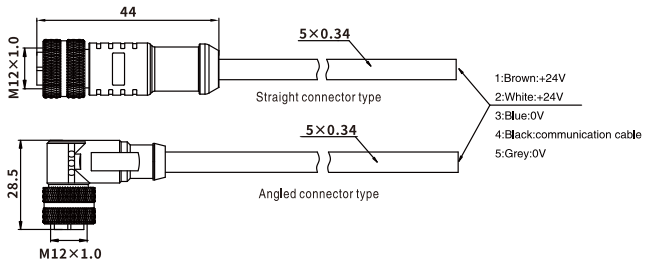
M12M125 □ — PVC — □

- M12M125: M12 Female 5 cores double connecting cable
- □: R:Straight connector type: M12 male connectors ↔ M12 female connectors; RL:Angled connector type: M12 male connectors ↔ M12 female connectors
- PVC
- □: 2M: 2 meters; 5M: 5 meters; (Other length could be customized)

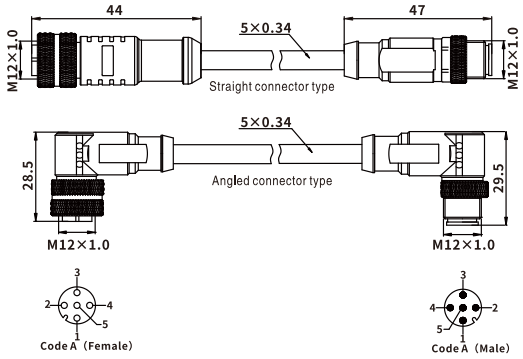
M12YM12 □ — PVC — □

- M12YM12: M12, Y–type connecting cable
- □: R:Straight connector type; RL:Angled connector type
- PVC
- □: 2M: 2 meters; 5M: 5 meters; (Other length could be customized)

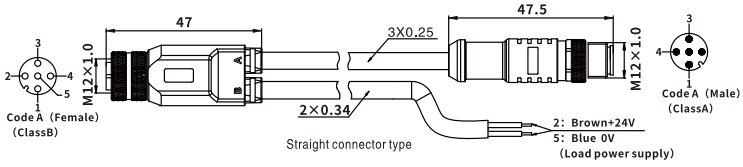
Single connecting cable(Class B)



Double connecting cable(Class B)



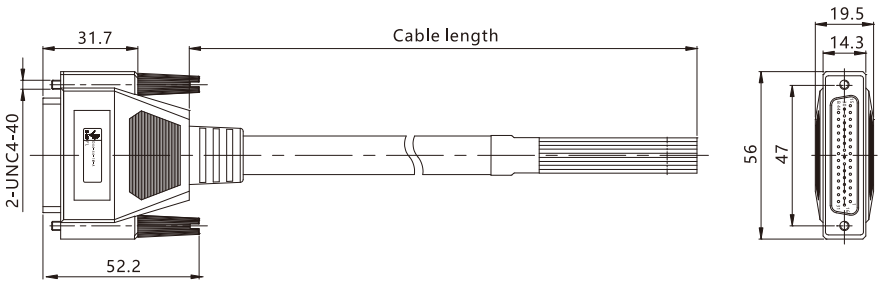
Y-type connecting cable(Class A&Class B)



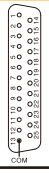
Precautions for Use

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 regularlly, 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. Ecept under industrial environments, when used under enviroments 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 opetrating voltage through the B–type port,normally,please provide power separately when A–type port used .

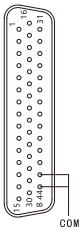
Connector Cable



D25–25 wire color

PINs of connector cable diagram	PIN number & Wire color							
	PIN number	D25–25 wire color	PIN number	D25–25 wire color	PIN number	D25–25 wire color	PIN number	D25–25 wire color
	1	Purple	8	Black	15	red with 1 point	22	white with 2 points
	2	Orange	9	Purple with 1 point	16	green with 1 point	23	red with 2 ponits
	3	Pink	10	Orange with 1 point	17	black with 1 point	24	green with 2 points
	4	Grey	11	Pink with 1 point	18	purple with 2 poin	25	black with 2 points
	5	white	12	Grey with 1 point	19	tsorange with 2 points		
	6	Red	13(COM)	Yellow	20	pink with 2 points		
	7	Green	14	white with 1 point	21	grey with 2 points		

D44–44 wire color

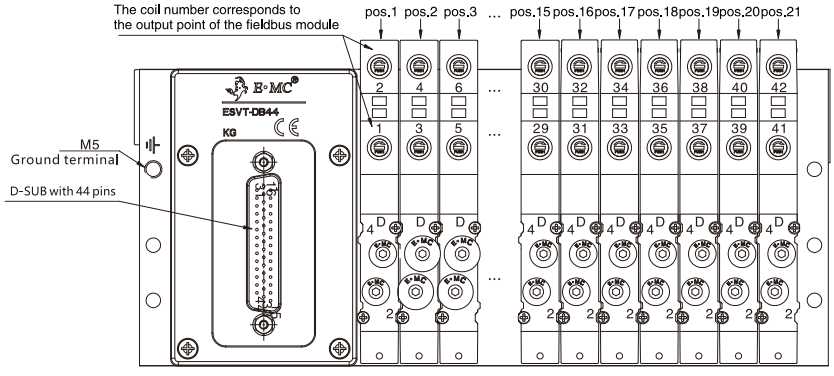
PINs of connector cable diagram	PIN number & Wire color							
	PIN number	D44–44 wire color	PIN number	D44–44 wire color	PIN number	D44–44 wire color	PIN number	D44–44 wire color
	1	orange	12	purple with 1 point	23	blue with 2 points	34	white with 3 points
	2	orange with 1 point	13	purple with 2 points	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)

D25/D44 Cable Ordering Code

Connect Types	—	Wires In Cable	—	Cable Length	—	A
D25: D-Sub connector with 25 pins D44: D-Sub connector with 44 pins		25: 25 wires(24 coils or less) 44: 44 wires(42 coils or less)		1M: 1 meters 2M: 2 meters 3M: 3 meters ..... (Other length could be customized)		

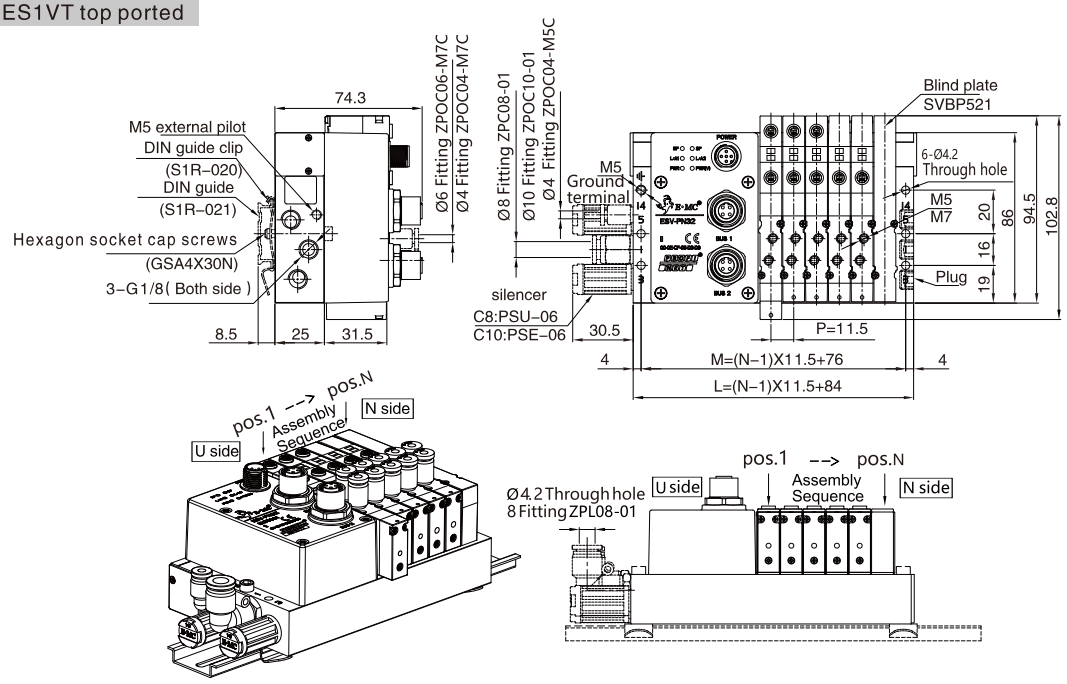
ESVT-DB44/DB25 Valve Terminal Inner Wiring Diagram

Wiring diagram of mixed signle/double control (DB 44 can control 42 coils maximun and 21 valve stations. suitable for 13 to 21pcs double control valves; DB25 can control 24 coils maximun and 12 valve stations. suitable for 2 to 12 pcs double control valves)



Main Dimension

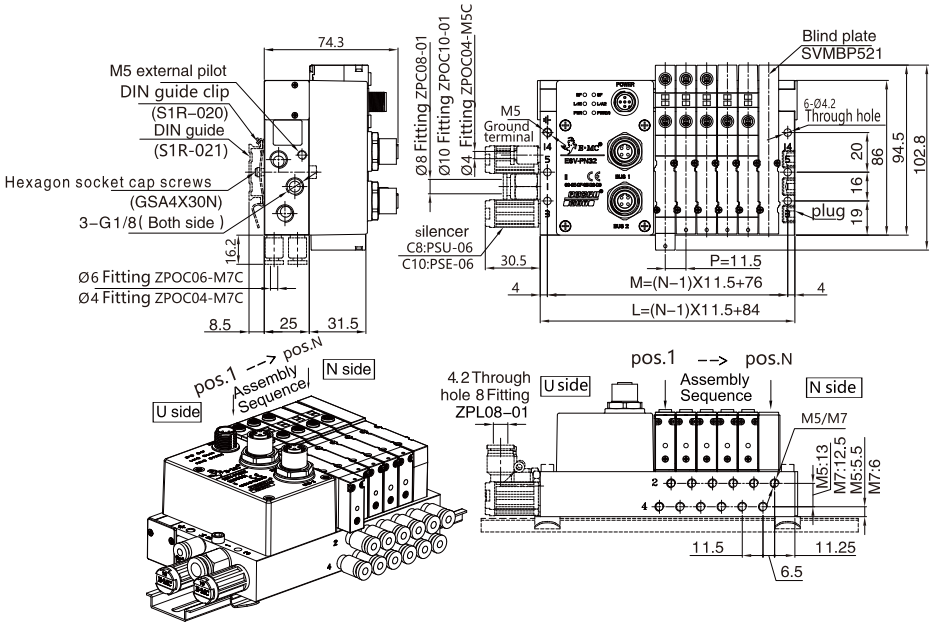
1 Series–ES1VT top ported



Note: N means valve link

Sign \ Model	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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
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

1 Series–ES1VMT side ported

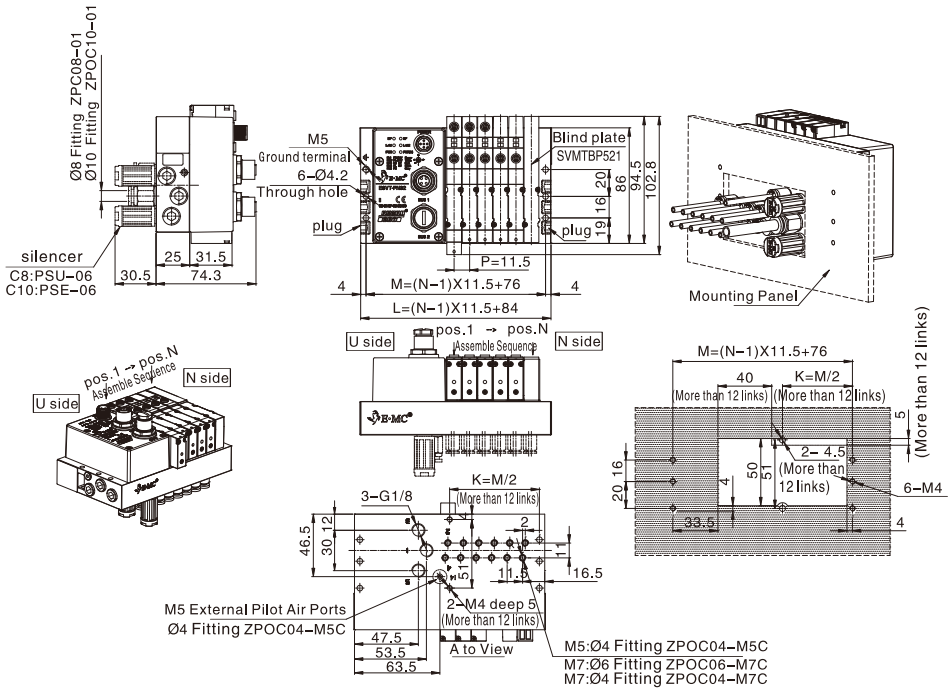


Note: N means valve link

Sign \ Model	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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
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

1 Series–ES1VBT Botten Ported

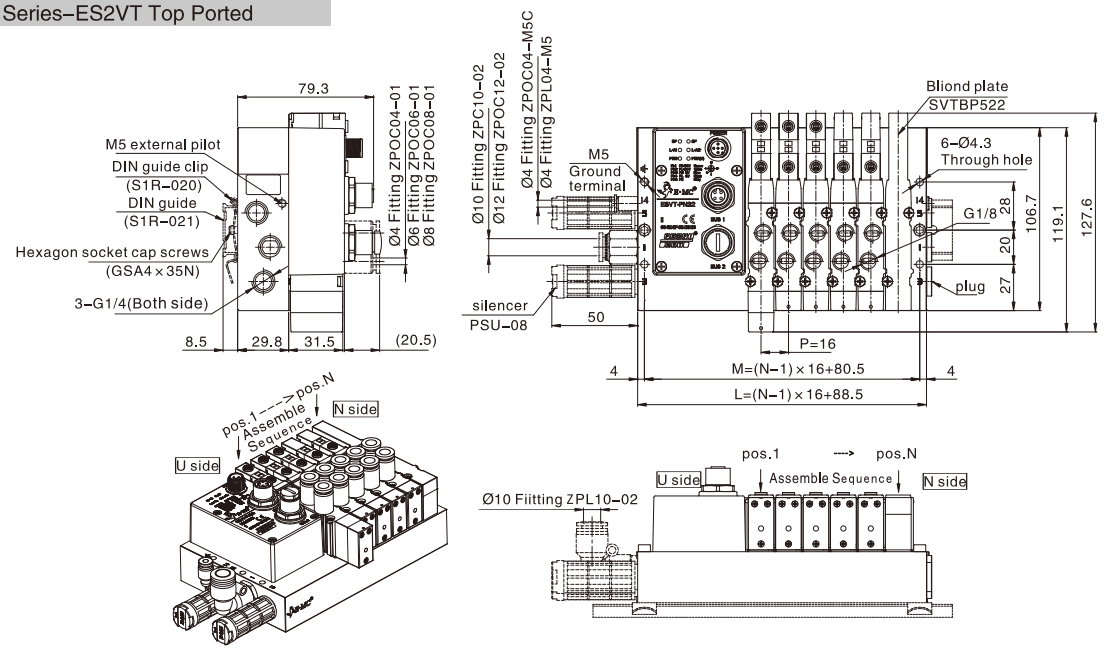


Note: N means valve link

Sign \ Model	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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
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
K												107	112.75	118.5	124.25	130	135.75	141.5	147.25	153	158.75	164.5	170.25

Main Dimension

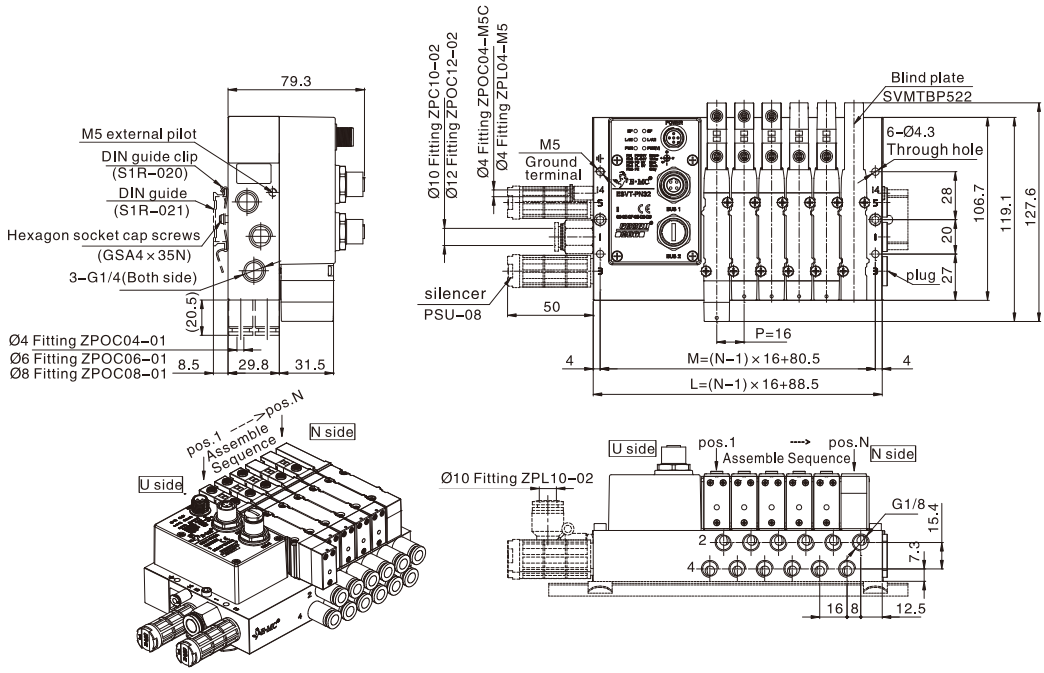
2 Series–ES2VT Top Ported



Note: N means valve link

Sign \ Model	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L	104.5	120.5	136.5	152.5	168.5	184.5	200.5	216.5	232.5	248.5	264.5	280.5	296.5	312.5	328.5	344.5	360.5	376.5	392.5	408.5	424.5	400.5	456.5
M	96.5	112.5	128.8	144.5	160.5	176.5	192.5	208.5	224.5	240.5	256.5	272.5	288.5	304.5	320.5	336.5	352.5	368.5	384.5	400.5	416.5	432.5	448.5

2 Series–ES2VMT Side Ported

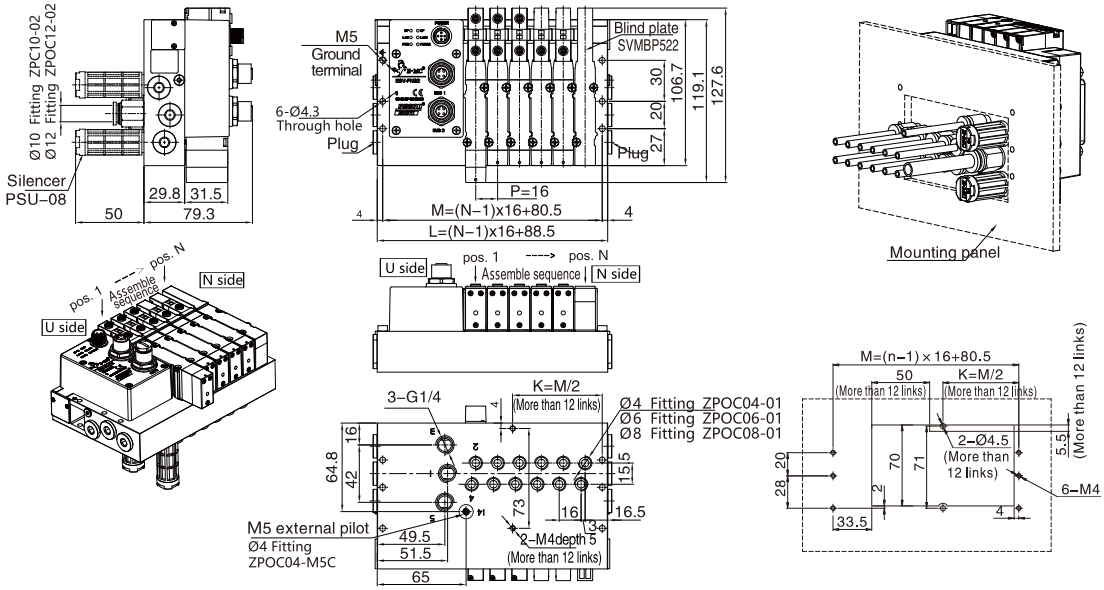


Note: N means valve link

Sign \ Model	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L	104.5	120.5	136.5	152.5	168.5	184.5	200.5	216.5	232.5	248.5	264.5	280.5	296.5	312.5	328.5	344.5	360.5	376.5	392.5	408.5	424.5	400.5	456.5
M	96.5	112.5	128.8	144.5	160.5	176.5	192.5	208.5	224.5	240.5	256.5	272.5	288.5	304.5	320.5	336.5	352.5	368.5	384.5	400.5	416.5	432.5	448.5

Main Dimension

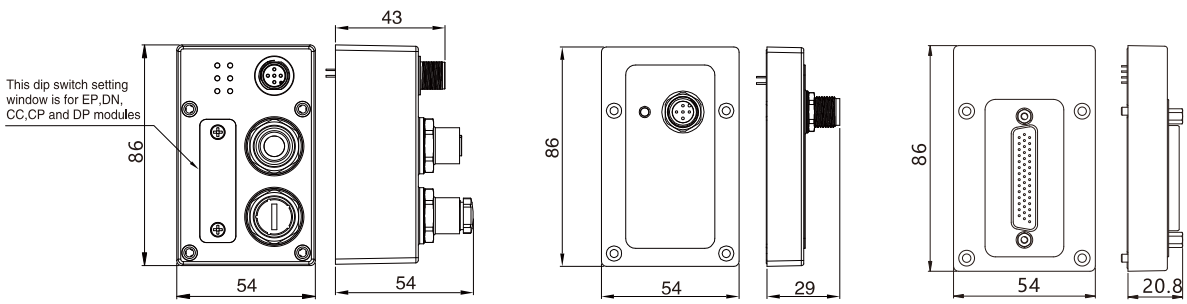
2 Series-ES2VBT bottom ported



Note: N means valve link

Sign \ Model	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L	104.5	120.5	136.5	152.5	168.5	184.5	200.5	216.5	232.5	248.5	264.5	280.5	296.5	312.5	328.5	344.5	360.5	376.5	392.5	408.5	424.5	400.5	456.5
M	96.5	112.5	128.8	144.5	160.5	176.5	192.5	208.5	224.5	240.5	256.5	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

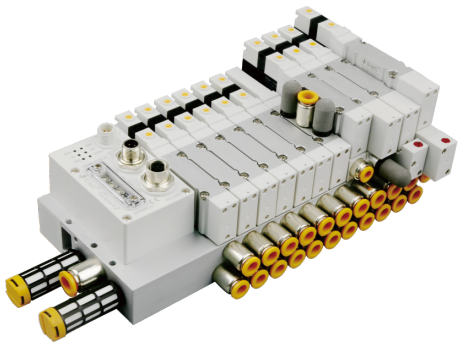
Dimensions of Control Module



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

IO-Link Protocol control module

DB44 dimensions



Product Features

- Ip65
- Individual intake stack module: used on the same valve island in situations with different pressures, it can supply air to the solenoid valve separately without occupying the valve position.
- Individual exhaust stack module: When using centralized exhaust on the same valve island, the exhaust between valves can affect each other and cause actuator misoperation, especially when using three position relief valves and single acting cylinders. The individual exhaust stack module can be used without occupying the valve position.
- Intake cut–off stack module (with residual pressure release): It can independently cut off the gas supply to designated solenoid valves and discharge residual pressure on the same valve island without cutting off the main valve island gas source. It can achieve separate maintenance and replacement of solenoid valves or cylinders with gas insertion and removal. *Mid position check stack module (with residual pressure release): Equipped with a three position five way medium release valve on the same valve island, the cylinder can be stopped for a long time, and equipped with two position five way valves can prevent the cylinder from falling, thereby improving the safety performance of the valve island.

Application Scenarios

1： Individual intake stack module

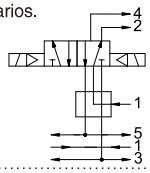
1. Application scenarios:

(1) Used as air supply ports for different pressures on the same valve island;

(2) Suitable for single/dual/three position solenoid valves;

(3) Suitable for both internal and external pilot scenarios.

2. Circuit diagram:



5/2 way dual electric control valves Individual intake stack module Manifold

2： Individual exhaust stack module

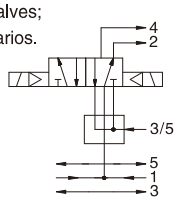
1. Application scenarios:

(1) When the exhaust of a valve affects other valves on the same valve island, a individual exhaust stack module can be added at this valve position;

(2) Suitable for single/dual/three position solenoid valves;

(3) Suitable for both internal and external pilot scenarios.

2. Circuit diagram:



5/2 way dual electric control valves Individual exhaust stack module Manifold

3： Intake cut–off stack module (with residual pressure release)

1. Application scenarios:

(1) Used when cutting off the air supply to each valve separately, i.e. air pressure hot plugging, without stopping the machine to replace the solenoid valve:

(2) Suitable for single/dual/three position center exhaust and center pressure solenoid valves;

(3) Due to the inability to release residual pressure, when equipped with a center close valve, please use the port 2 and 4 piping in combination with a three–way valve, etc;

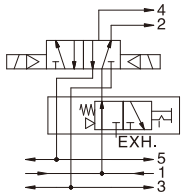
(4) As the product cannot cut off the external pilot air source, it can only be used for internal pilot applications.

2. Manual button operation instructions:

(1) Use a straight screwdriver to press the manual button to the bottom at the PUSH position, and then rotate it clockwise 90 ° to the LOCK position;

(2) Unlock the manual button and rotate counterclockwise 90 ° to the PUSH position.

3. Circuit diagram:



5/2 way dual electric control valves Intake cut–off stack module (with residual pressure release) Manifold

4： Mid position check stack module (with residual pressure release)

1. Application scenarios:

(1) When the cylinder needs to maintain the middle position for a long time, it should be used with a three position relief valve and cannot be combined with three position sealing type, medium pressure type, or two two position three–way solenoid valves;

(2) Equipped with two position single and dual electric control valves, it can prevent the end of cylinder stroke from falling:

(3) suitable for internal and external pilot applications.

2.Specifications：

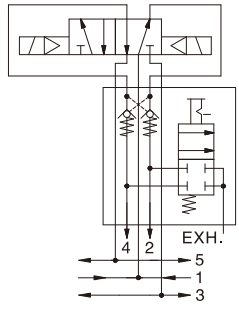
Maximum operating pressure	0.8MPa
Minimum operating pressure	0.2MPa
Maximum operating frequency	3 times per second

3.Circuit diagram：

5/2 way dual electric control valves

Mid position check stack module (with residual pressure release)

Manifold

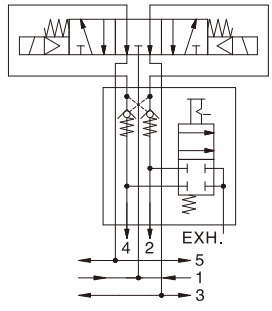


Prevent falling:
equipped with 5/2 way dual electric control valves

5/3 way center exhaust

Mid position check stack module (with residual pressure release)

Manifold



Intermediate maintenance:
equipped with a 5/3 center exhaust valve

How to order

SVMT series stack module

Series Code	Type	I.D. Code	Component Code	5/2	Body Size
S	VM	T	MP: Individual intake stack module Ø 6 ① MPF: Individual intake stack module Ø 4 ① MPL: Individual intake stack module Ø 8 ① XP: Individual exhaust stack module VP: Air intake cut–off stack module (with residual pressure release) WP: Mid position check stack module (with residual pressure release)	52	2 : 2 Series②

Note:
① There are three options for connecting the separate intake stack module, Ø6/Ø4/Ø8。
② The stack module is only suitable for the 2 series, plate valve island.

Order Example: Individual intake stack module Ø6, ERP code SVMTMP522.

ES2VMT+Fieldbus Valve Terminal

Series No. | Body Size | Piping Type | I.D. Code | Communication Protocol — □ □ — □ □ | Voltage | Pilot Type | Manual Button | Wiring Type | Manifold Port | Mounting | Thread Type

Series No.: ES: Fieldbus valve terminal; ESN: Energy–saving Fieldbus valve terminal
Body Size: 2: 2 series
Piping Type: VM: Side ported
I.D. Code: T
Communication Protocol:

Protocols type	Communication Protocol	Output	Max Valve Quatity
EC32	EtherCAT	32	16
EC48		48	24
PN32	PROFINET	32	16
PN48		48	24
EP32	EtherNet/IP	32	16
EP48		48	24
CC32	CC–Link	32	16
CC48		48	24
DP32	Profibus–DP	32	16
DP48		48	24
CP32	CANopen	32	16
CP48		48	24
LK32	IO–Link	32	16
LK48		48	24
DB25	D–SUB25	24	12
DB44	D–SUB44	42	21

Qty
Valve quantity for different port

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.)	
YK①	2pcs 3/2 (N.C.) spring return	
HK①	2pcs 3/2 (N.O.) spring return	
UK①	2pcs 3/2 (N.O./N.C.) spring return	
B	blind plate	
N ②	air supply & exhaust moudle	
TA③	port 1 air supply pressure separate	Added after the corres–ponding valve position code
TG③	port 3/5 air exhaust pressure separate	
TL③	port 1/3/5 air supply & exhaust pressure separate	
M ④	Individual intake stack module Ø6	
MF④	Individual intake stack module Ø4	
ML④	Individual intake stack module Ø8	
X	Individual exhaust stack module	
V ⑤	Air intake cut–off stack module(with resideal pressure release)	
W ⑥	Mid position check stack module(with resideal pressure release)	

Voltage: E4: DC24V
Pilot Type: Blank:Interal pilot; WB:External pilot①

series	code	Port size	Remark
2 Series	06	1/8port	assembly sequence, 1st link start from U side
	C4	Ø4one–touch fitting(ZPOC04–01)	
	C6	Ø6one–touch fitting(ZPOC06–01)	
	C8	Ø8one–touch fitting(ZPOC08–01)	

Manual Button: Blank: Press & Rotate Lock; H: Without Lock
Wiring Type: Blank: Double control wiring (max.24 links)
Manifold Port: Blank: Without accessories; D: With DIN rail clip and 1M guide rail; D0: With DIN rail clip, no guide rail; DIN guide rail packed separatly (if order with guide rail, the guide rail will be packed separately)
Mounting:

Code	Port Entry / Silencer, Fitting size	2 Series	Remark
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	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,POC fitting	Ø12	
N1	Station N with silencer, POC fitting		
UN1	Both side with silencer, POC fitting		

Thread Type: Blank: G; P: PT; T: NPT

Note
1、① Y/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 retum;
2、②When the intake connection of the intake and exhaust module is C4/C6/C8, the exhaust port is equipped with a muffler by default. When the connection is 1/8, the exhaust port is not equipped with a muffler by default;
3、③The pressure zoning characteristics are the same as the SV series;
4、④There are three options for connecting the individual intake stack module: 06/04/08;
5、⑤The intake cut–off module cannot cut off the external pilot air, so it cannot be used in external pilot situations;
6、⑥The mid position check stack module cannot be used for 5/3 center close,5/3 center pressure, and 2x3/2, that is, W cannot be combined with C/P/Y/H/U/YK/HK/UK.

Basic principles of ordering code:

When two or more adjacent valve positions have the same function, use the same number of valve positions to represent the total number of valve positions. For example, if the first to fourth valve positions are dual electronic control solenoid valves and all four valve positions contain separate intake stacking modules, the code is DMDMDMDM, simplified as 4DM. This principle applies to all valve groups or valve island ordering codes.

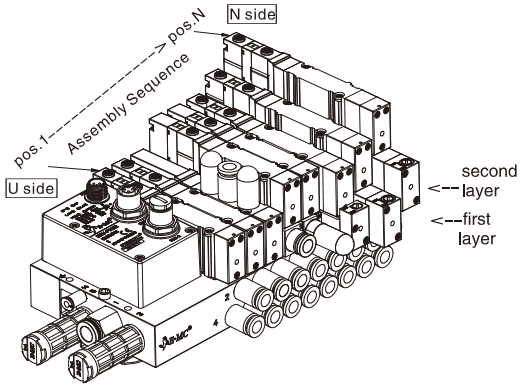
Order Example:

1、When using the same specification valve and stacking module on the same layer: S series standard type, 2 series, side ported, 8–position 5/2 way dual electric control solenoid valve SVMT5222, the first to sixth valve positions are equipped with separate intake stacking module 06 air pipe, working port 06 air pipe fitting, working voltage DC24V, internal filot type, wiring method is dual electric control wiring, the intake and exhaust ports are on both sides without muffler, fitting, plug, G thread. The ERP code is SVMT–6DM2D–C6E4.

2、When using different specifications of valves and stacking modules on one layer: S series standard type, 2 series, side ported, the first to fourth valve positions are all 5/2 way dual electric control solenoid valves SVMT5222, the fifth to seventh valve positions are all 5/3 way center exhaust solenoid valves SVM5322E, the eighth valve position is a blind plate, the first and second valve positions are equipped with separate intake stacking modules 06 air pipes, the third and fourth valve positions are equipped with separate exhaust stacking modules, the fifth valve position is equipped with intake check stacking modules, the sixth and seventh valve positions are equipped with center check stacking modules, the working port 06 air pipe joint, the working voltage is DC24V internal pilot type, the wiring method is dual electric control wiring, and the intake and exhaust ports are on both sides without mufflers, fittings, or plugs. G thread. The ERP code is SVMT–2DM2DXEV2EWB–C6E4.

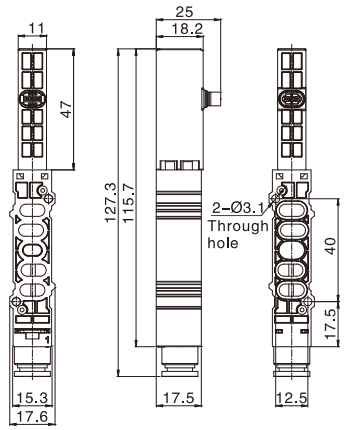
3、When mixing two layers of different stacked modules with valves of different specifications:S series standard type, 2 series, side ported,The first and second valve positions are both 5/2 way dual electronic control solenoid valves SVM5222, the third valve position is the intake and exhaust module, the fourth and fifth valve positions are both 5/2 way single electronic control solenoid valves SVMT5221, the sixth, seventh, and eighth valve positions are all 5/3 way center exhaust solenoid valves SVMT5322E, the fourth valve position is equipped with a separate intake stack module 06 air supply, the fifth valve position is equipped with a separate exhaust stack module, the sixth valve position is equipped with an intake cutoff stack module, the seventh valve position is equipped with a mid position check stack module, and the eighth valve position is equipped with a separate intake stack module 06 air pipe on the first layer and a mid position check stack module on the second layer, with a working port ϕ8 air pipe fitting, working voltage of DC24V, internal pilot type, wiring method is dual electric control wiring, U–side installation of muffler, PL connector, installation of DIN rail buckle and 1–meter DIN rail, G–thread.

The ERP code is SVMT–2DNSMSXEVEMW–C8E4–UL–D(as shown in the above figure).

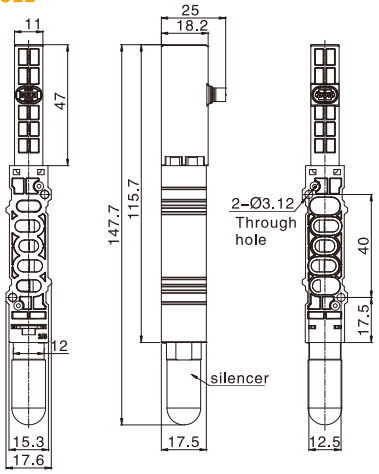


Main Dimension

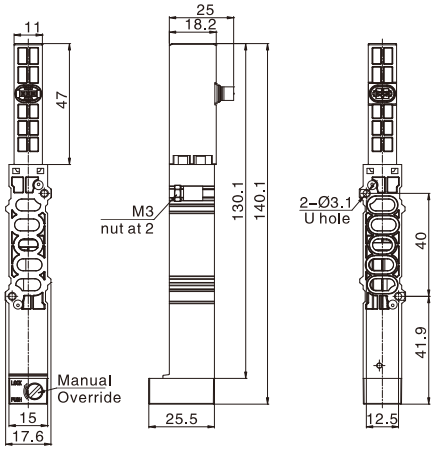
SVMTMP522



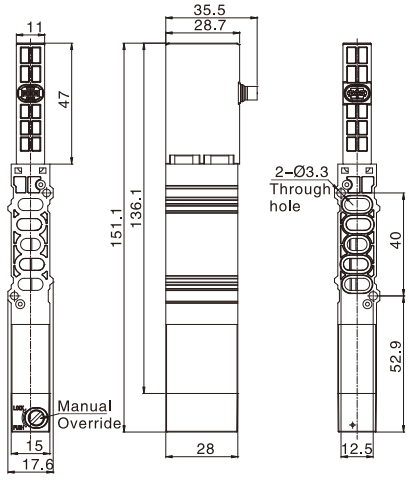
SVMTXP522



SVMTVP522

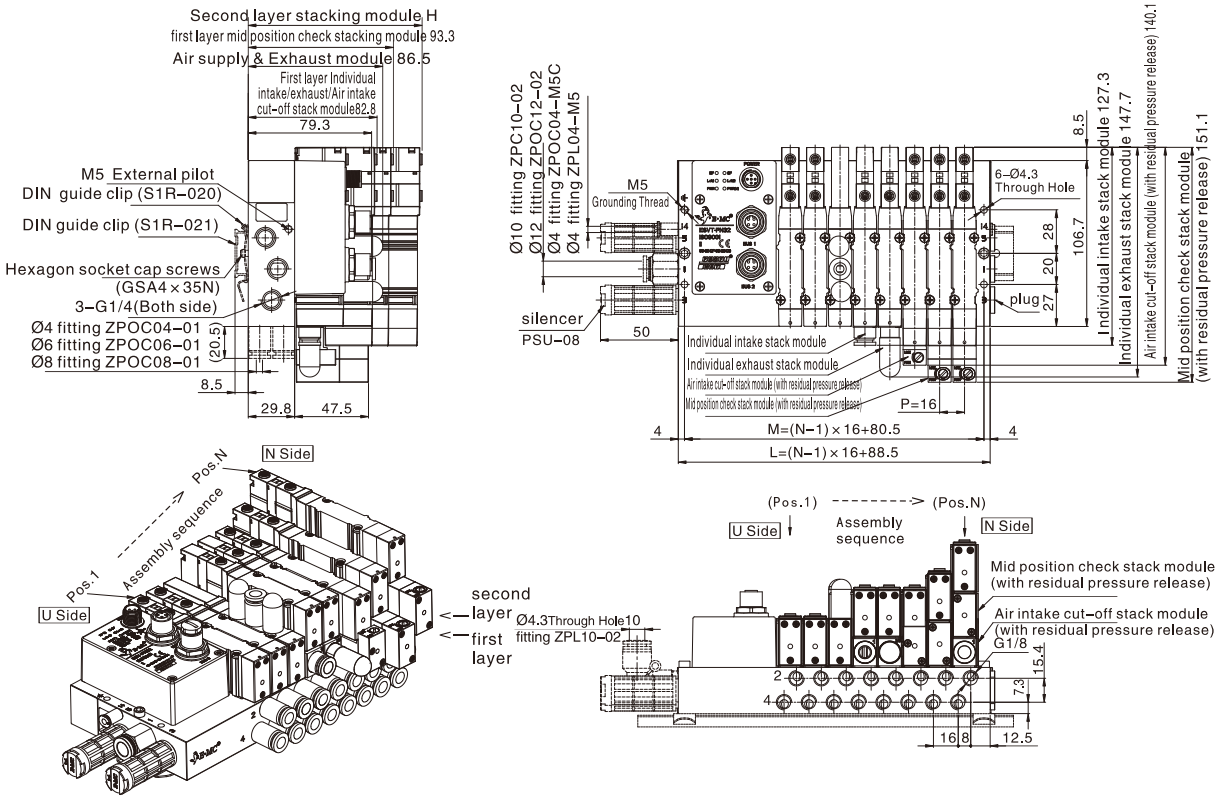


SVMTWP522



Main Dimension

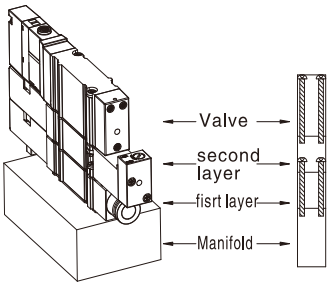
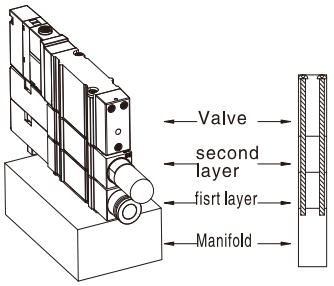
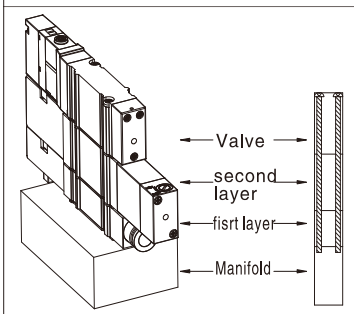
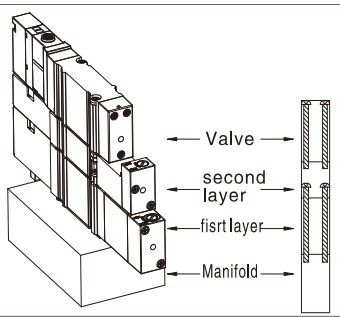
ES2VMT side ported valve terminal +stacking module



Note: N indicates the number of valve positions.

Model / Sign	Individual intake/Exhaust + Air intake cut-off stack module	Individual intake/Exhaust + Mid position check stack module	Individual intake+Exhaust stack module	Mid position check+ Air intake cut-off stack module
H	101.3	111.8	101.3	111.8

Model / Sign	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L	104.5	120.5	136.5	152.5	168.5	184.5	200.5	216.5	232.5	248.5	264.5	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	96.5	112.5	128.5	144.5	160.5	176.5	192.5	208.5	224.5	240.5	256.5	272.5	288.5	304.5	320.5	336.5	352.5	368.5	384.5	400.5	416.5	432.5	448.5

Stacking module combination			Unicorn head screws	Stacking module combination			Screws
	second layer	Air intake cut-off stack module (with residual pressure release)	M3X33 (2)		second layer	Individual intake/ exhaust stack module	M3X70 (2)
	fisrt layer	Individual intake/ exhaust stack module	M3X28 (2 No. 1 slots)		fisrt layer	Individual intake/ exhaust stack module	
	second layer	Mid position check stack module (with residual pressure release)	M3X80 (2)		second layer	Air intake cut-off stack module (with residual pressure release)	M3X33 (2)
	fisrt layer	Individual intake/ exhaust stack module			fisrt layer	Mid position check stack module (with residual pressure release)	M3X38.5 (2 No. 1 slots)