

# VT Series VALVE TERMINALS

## VT340-VT540



### FEATURES

1. The air circuit layout is simple and intuitive, reducing the wiring space
2. More reliable air circuit structure design
3. Less installation space and convenient installation
4. Various types of solenoid valves can be installed optionally
5. Centralized air supply and exhaust
6. Modular design, any number of valve combinations

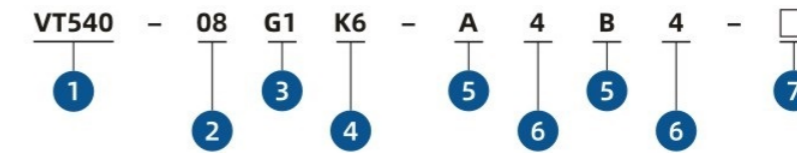
### SPECIFICATION

Model No.	VT540	VT340
Working ambient temperature	-5℃ ~ -50℃	
Max pressure	10bar	
Working Pressure	1.5~7bar	
Working medium	Compressed Air (filtered by 40μm filter screen)	
Size	Width 144mm,height 72.5mm,length 252.5mm (12 valves)	Width 99.3mm,height 61.1mm,length 175.4mm(12valves)
Rated voltage	DC24V±10%	
Bus interface	DB-25 pin	
Input Port	G1/4	G1/4 (max φ 8 Quick connector)
Exhaust Port	G1/4	G1/4(max φ 8 Quick connector)
Working port	φ 6/ φ 4 Quick connector	
Solenoid valve Type	5/2(NC)(Single Coil ,Double Coil)	5/3(NC)(center close type,center exhaust type,center pressure type)
Reted Power	1W	
Response time	Open:9ms; Close:10ms	
Valve Orifice	3.3mm	2.4mm
Valve life cycles	30 million times	
Number of combinations	2~24	
Manifold material	PA6+50GF	
Valve material	Aluminium	
IP Class	IP40	
Remark		

### INSTALL AND OPERATION

1. First put the connector to the P port, then put connector or slincer to the EA and EB port
2. Insert the wire on the manifold and tighten according to the wire guide
3. Connect the air source to the P port, check whether the solenoid valve of each group is controlling the Mirco valve. Without power condition, for 3/2 way solenoid (NC) type, B port is exhaust port. With Power condition,for 3/2 way solenoid valve(NC) type, A port is exhaust port.
4. Then connect the A and B ports of each 3/2 solenoid valve to the pneumatic actuator with an air pipe, and adjust it
5. Final step is put the manifold on the equipment fixed with screw

### ORDERING CODE



1. Model Series  
VT340  
VT540

2. Combination  
02-24

3. Inlet Port  
G1/4

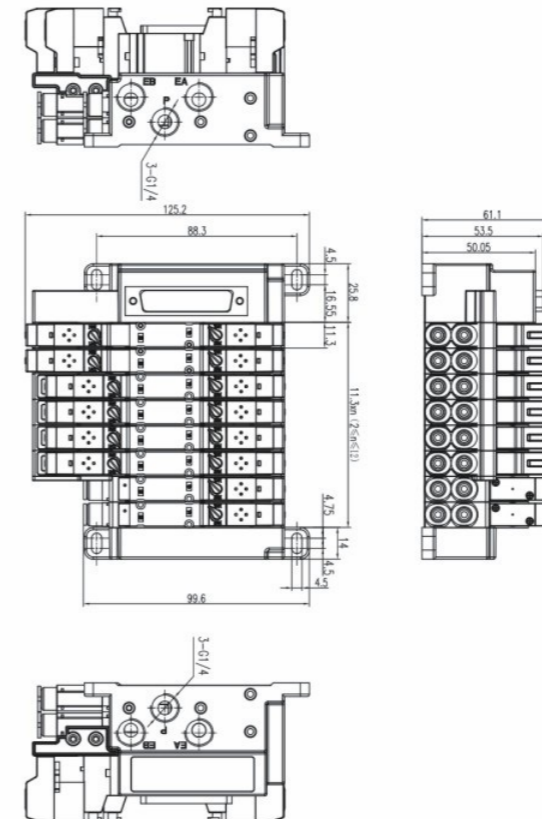
4. Working port  
K4: φ4 Quick connector  
K6: φ6 Quick connector

5. Valve Type  
A: 5/2 Single Coil  
B: 5/2 Double Coil  
C: 5/3 Double coil center close type  
D: 5/3 Double coil center exhaust type  
E: 5/3 Double coil center pressure type

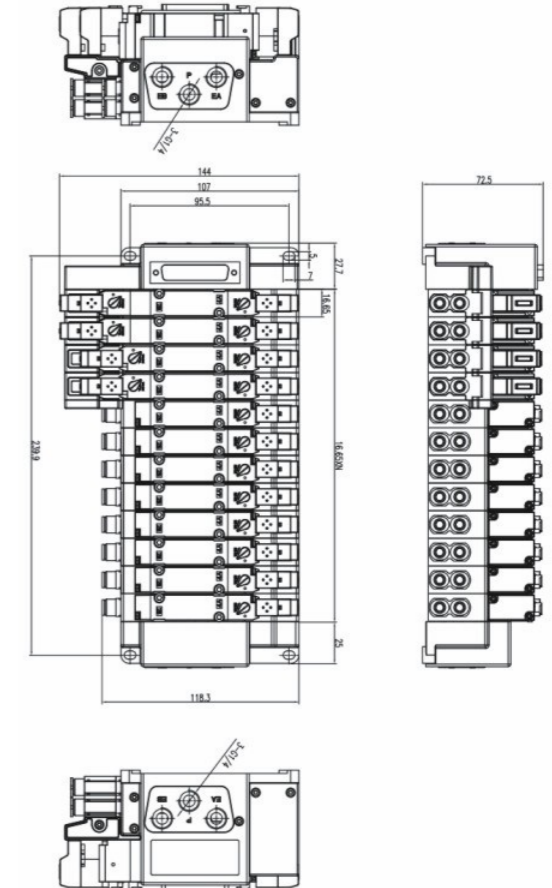
6. Valve Quantity  
2-24

7. Indicator light, surge, voltage protection circuit  
Blank: With indicator light, no surge and voltage protection  
R: With indicator light, surge and voltage protection

### VT340 Graphy



### VT540 Graphy



## VT540/340 Manifold Bus Interface Module



### SPECIFICATION

Project Specification	Profinet
Control Power Supply	24VDC +-10%
Output Power Supply	24VDC +-10%
Internal Friction Current	Less than 100 mA
Output Points	24 Points
Output Load	Single Valve 24V 1W Output, 24 Valves Maximum Output Current 1.5A;
Output Polarity	PNP,-COM
Version	Version 2.4, Conformance Class CC-C
Addressing mode	DCP
Voltage Detection	Support Voltage Detection
Reverse Connection Protection and Over-voltage Protection	Support
IRT	YES
MRP	YES
Diagnose	YES
Communication Rate	100M bps
Communication Port	Use M12( Meet Profinet Specification)
Communication Connection Type	Daisy Chain
Set File	GCD File
Authentication	EN 61000-6-4:2007+A1:2011, EN IEC 61000-6-2:2019
EMI	CLASS A
Power Interruptions	More than 10ms
Withstand Voltage	GB/T24344, 500 VAC for one minute
Insulation Resistance	GBT24343, 500VDC Voltage, Insulation at least 10 MΩ
Vibration Measurement	5G, 10~150Hz, Continuous Vibration test for 2 hours
Working Temperature	-10~50°C
Working Humidity	35-85%RH

### ORDERING CODE

VT540 - 08 G1 K6 - A 4 B 4 -  - PNT

1 2 3 4 5 6 5 6 7 8

1. Model Series  
VT340  
VT540

2. Combination  
02-24

3. Inlet Port  
G1/4"  
08:intake on the 8th  
10:intake on the 10th  
(Note:08,10 can only be selected with protocol types)

4. Working port  
K4: Φ4 Quick connector  
K6: Φ6 Quick connector

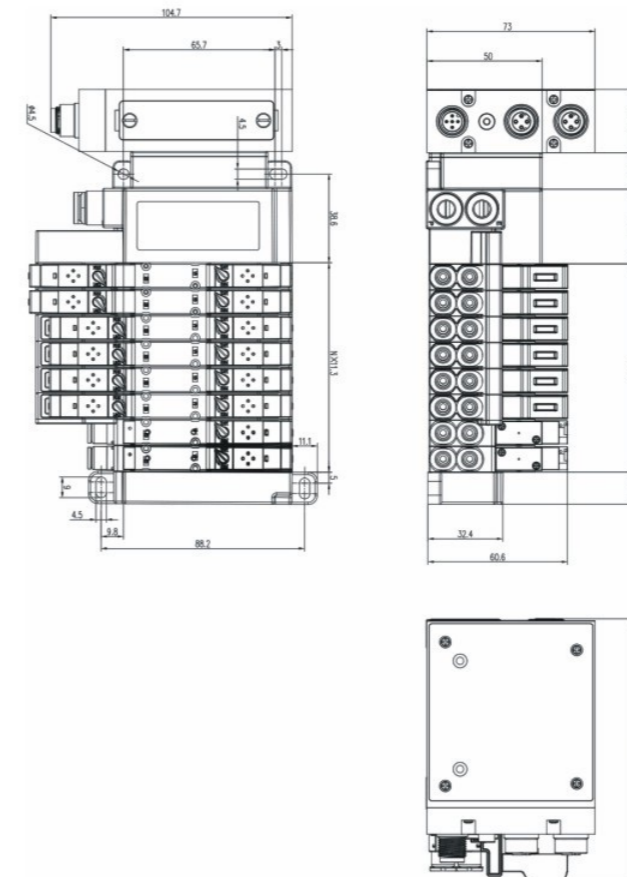
5. Valve Type  
A: 5/2 Single Coil  
B: 5/2 Double Coil  
C: 5/3 Double coil center close type  
D: 5/3 Double coil center exhaust type  
E: 5/3 Double coil center pressure type

6. Valve Quantity  
2-24

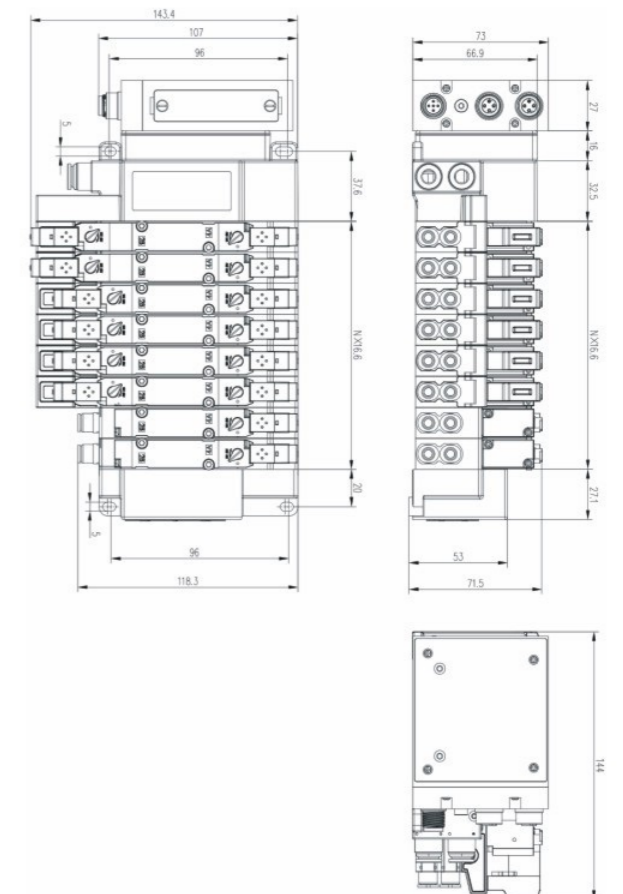
7. Indicator light, surge, voltage protection circuit  
Blank: With indicator light, no surge and voltage protection  
R: With indicator light, surge and voltage protection

8. Protocol types  
PNT: Profinet  
ECT: EtherCAT

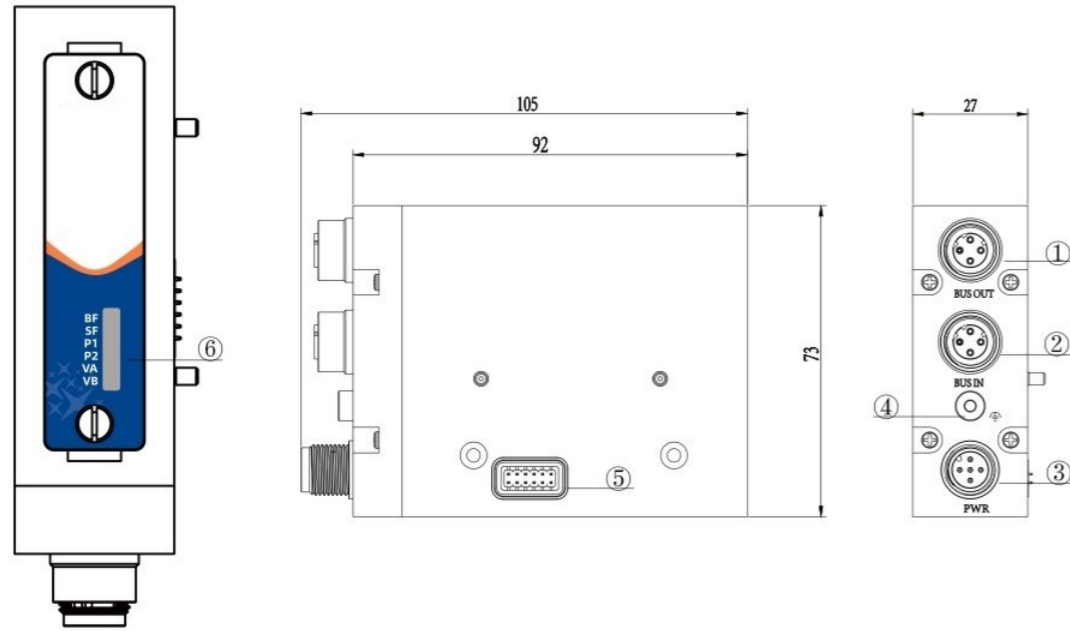
### VT340 Graphy



### VT540 Graphy



## Appearance and Interface



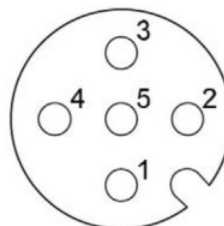
No.	Definition	Description
1	P1	Interface 1 PORT OUT, M12 Female, 4-pin, D-coded
2	P2	Interface 2 PORT IN, M12 Female, 4-pin, D-coded
3	Current	Input Power, M12 Male, 5-pin, A-coded
4	Ground Connection	Ground Terminal
5	Output	12PIN
6	Indicator Light	Status Display

### P1\P2: M12 4PIN socket, D-coded



No.	Definition	Description
1	TD+	Transmit Data +
2	RD+	Receive Data +
3	TD-	Transmit Data -
4	RD-	Receive Data -

### PWR: M12 5PIN plug, A-coded



No.	Definition	Description
1	V1 24V	+24V for solenoid valve
2	V1 0V	0V for solenoid valve
3	V2 24V	+24V for V2 unit operation
4	V2 0V	0V for V2 unit operation
5	FE	Function Ground Connection

## Indicator Light

No.	Definition	Indicator	Description
1	BF	Light Off	PROFINET software is not initialized
		Red Light Normally On	Equipment Offline
		Red Light Single Flash	Hardware Configuration and Parameterization are not reasonable
		Red Light Flash Three Times	IOPS = BAD (PLC Stop)
		Green Light Normally On	Communication is Normal
2	SF	Light Off	The device was not initialized
		Red Light Normally On	Hardware Failure
		Red Light Flash Slowly	Open circuit Fault
		Red Light Flash Swiftly	Short Circuit Fault
		Red Light Double Flash	Error , Internal Communication
		Red Light Flash Three Times	A Fatal Error
3	P1	Green Light Normally On	Module is Normal
		Light Off	Link Lost Connection
		Yellow Light On / Green Light ON	Link Communication Establishment
4	P2	Yellow Light On / Green Light ON	Link Communication Establishment
		Light Off	Link Lost Connection
		Yellow Light On / Green Light Flashes	Link Communication Activation
5	VA	Green Light Normally On	Manifold Power Supply , Normal
		Red Light Flashes	Manifold Power Supply , Under voltage
		Red Light Normally On	Manifold Power Supply, Over voltage
6	VB	Green Light Normally On	System Power Supply , Normal
		Red Light Flashes	System Power Supply , Under voltage
		Red Light Normally On	System Power Supply, Over voltage

## Input and Output Data List

### 4.1 Input list

	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
BYTE0		OC	SC	COR	UV_V2	OV_V2	UV_V1	OV_V1
BYTE1	SC_7	SC_6	SC_5	SC_4	SC_3	SC_2	SC_1	SC_0
BYTE2	SC_15	SC_14	SC_13	SC_12	SC_11	SC_10	SC_9	SC_8
BYTE3	SC_23	SC_22	SC_21	SC_20	SC_19	SC_18	SC_17	SC_16
BYTE4	OC_7	OC_6	OC_5	OC_4	OC_3	OC_2	OC_1	OC_0
BYTE5	OC_15	OC_14	OC_13	OC_12	OC_11	OC_10	OC_9	OC_8
BYTE6	OC_23	OC_22	OC_21	OC_20	OC_19	OC_18	OC_17	OC_16
BYTE7	COUNT_7	COUNT_6	COUNT_5	COUNT_4	COUNT_3	COUNT_2	COUNT_1	COUNT_0
BYTE8	COUNT_15	COUNT_14	COUNT_13	COUNT_12	COUNT_11	COUNT_10	COUNT_9	COUNT_8
BYTE9	COUNT_23	COUNT_22	COUNT_21	COUNT_20	COUNT_19	COUNT_18	COUNT_17	COUNT_16

# VT Series VALVE TERMINALS



## BYTE0:

Indicator	Description	
bit7	Reserve	
bit6	1 Open Circuit Detected	0 No Open Circuit Detected
bit5	1 Short Circuit Detected	0 No Short Circuit Detected
bit5	1 The switch count has reached the upper threshold	0 The switch count donot reach the upper threshold
bit3:bit2	0:0	Electronics power supply Normal
	0:1	Electronics power supply Over Voltage
	1:0	Electronics power supply Under Voltage
bit1:bit0	0:0	Valves power supply Normal
	0:1	Valves power supply Over Voltage
	1:0	Valves power supply Under Voltage

### BYTE1: BYTE3

Sc-0 corresponds to the short circuit of channel 0, SC-23 corresponds to the short circuit of channel 23, and so on to know the short circuit of each channel. Bit value: 1 Short circuit, 0 indicates no short circuit.

### BYTE4: BYTE6

OC-0 corresponds to the open status of channel 0, OC-23 corresponds to the open status of channel 23, and so on to know the open status of each channel. The Bit value is 1 Open circuit, and 0 indicates no open circuit.

### BYTE7: BYTE9

Count-0 indicates the open status of channel 0, count-23 indicates the open status of channel 23, and so on to know the open status of each channel. The Bit value is 1 Open circuit, and 0 indicates no open circuit.

## 4.2 Output List

	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
BYTE0	SC_7	SC_6	SC_5	SC_4	SC_3	SC_2	SC_1	SC_0
BYTE1	SC_15	SC_14	SC_13	SC_12	SC_11	SC_10	SC_9	SC_8
BYTE2	SC_23	SC_22	SC_21	SC_20	SC_19	SC_18	SC_17	SC_16

O\_0~O\_23: O\_0 indicates Channel 0, O\_23 indicates Channel 23, and so on to know the location of other channels.

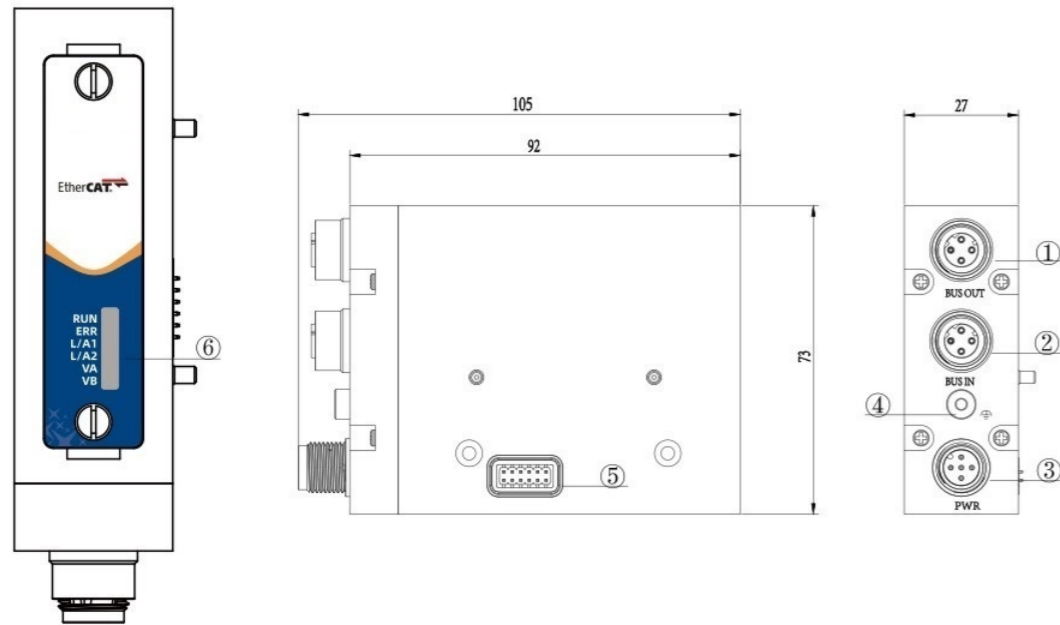
## 4.3 Error Code

Error Code (Hexadecimal)	Error Description	LED State
0x00	0x00, Normal	"SF" LED, Green Light Normally On
0x01	Manifold , Coil Short circuit	"SF" LED, Red Light Flashes
0x06	Manifold, Coil Open Circuit	"SF" LED, Red Light Flashes
0x07	N/A	
0x100	The power supply to the module is under voltage	"V2" LED, Red Light Flashes
0x101	The power supply to the module is over voltage	"V2" LED, Red Light Normally On
0x102	The power supply to the manifold is under voltage	"V1" LED, Red Light Flashes
0x103	The power supply to the manifold is over voltage	"V1" LED, Red Light Normally On

## SPECIFICATION

Project Specification	Ethercat
Control Power Supply	24VDC +-10%
Output Power Supply	24VDC +-10%
Internal Friction Current	Less than 100 mA
Output Points	24 Points
Output Load	Single Valve 24V 1W Output, 24 Valves Maximum Output Current 1.5A;
Output Polarity	PNP,-COM
Version	Test Record V.1.2.8
EtherCAT mode	Direct Mode
Address Set	Automatic Setting
DC Mode	Support. Distributed clocks
Voltage Detection	Support Voltage Detection
Reverse Connection Protection and Over-voltage Protection	Support
Diagnose	Open Circuit , Short Circuit, Switch Counting Diagnostic Function
Communication Rate	100M bps
Communication Port	Use M12( Meet EthernetCAT Specification)
Communication Connection Type	Daisy Chain
Set File	XML File
Authentication	EN 61000-6-4:2007+A1:2011, EN IEC 61000-6-2:2019
EMI	CLASS A
Power Interruptions	More than 10ms
Withstand Voltage	GB/T24344, 500 VAC for one minute
Insulation Resistance	GBT24343, 500VDCVoltage, Insulation at least 10 MΩ
Vibration Measurement	5G, 10~150Hz, Continuous Vibration test for 2 hours
Working Temperature	-10~50℃
Working Humidity	35-85%RH

## Appearance and Interface



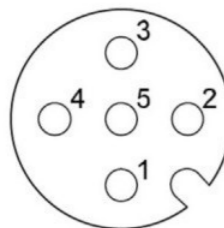
No.	Definition	Description
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2	P2	Interface 2 PORT IN, M12 Female, 4-pin, D-coded
3	Current	Input Power, M12 Male, 5-pin, A-coded
4	Ground Connection	Ground Terminal
5	Output	12PIN
6	Indicator Light	Status Display

### P1\P2: M12 4PIN socket, D-coded



No.	Definition	Description
1	TD+	Transmit Data +
2	RD+	Receive Data +
3	TD-	Transmit Data -
4	RD-	Receive Data -

### PWR: M12 5PIN plug, A-coded



No.	Definition	Description
1	V1 24V	+24V for solenoid valve
2	V1 0V	0V for solenoid valve
3	V2 24V	+24V for V2 unit operation
4	V2 0V	0V for V2 unit operation
5	FE	Function Ground Connection

## Indicator Light

No.	Definition	Indicator	Description
1	RUN	Green Light Out	The device is in INIT state
		Green Light Flashes	The device is in SAFEOP state
		Green Light Single Flash	The device is in PREOP state
		Green Light Normally On	The device is in OP state
2	ERR	Red Light Out	Configuration Error
		Red Light Flashes	No Error
		Red Light Single Flash	Local Equipment Error
3	L/A1	Red Light Double Flash	The watchdog is out of time
		Light Out	Connection not established
		Green Light On	Connection Established , No Communication
4	L/A2	Green Light Flashes	Connection Established , Has Communication
		Light Out	Connection Established , No Communication
5	VA	Green Light On	Connection not established
		Green Light Flashes	Connection Established , Has Communication
		Red Light On	Manifold Power Supply , Under voltage
6	VB	Red Light On	Manifold Power Supply, Over voltage
		Green Light On	System Power Supply , Normal
		Red Light Flashes	System Power Supply , Under voltage
		Red Light On	System Power Supply, Over voltage

## Input and Output Data List

### 4.1 Input list

	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
BYTE0		OC	SC	COR	UV_V2	OV_V2	UV_V1	OV_V1
BYTE1	SC_7	SC_6	SC_5	SC_4	SC_3	SC_2	SC_1	SC_0
BYTE2	SC_15	SC_14	SC_13	SC_12	SC_11	SC_10	SC_9	SC_8
BYTE3	SC_23	SC_22	SC_21	SC_20	SC_19	SC_18	SC_17	SC_16
BYTE4	OC_7	OC_6	OC_5	OC_4	OC_3	OC_2	OC_1	OC_0
BYTE5	OC_15	OC_14	OC_13	OC_12	OC_11	OC_10	OC_9	OC_8
BYTE6	OC_23	OC_22	OC_21	OC_20	OC_19	OC_18	OC_17	OC_16
BYTE7	COUNT_7	COUNT_6	COUNT_5	COUNT_4	COUNT_3	COUNT_2	COUNT_1	COUNT_0
BYTE8	COUNT_15	COUNT_14	COUNT_13	COUNT_12	COUNT_11	COUNT_10	COUNT_9	COUNT_8
BYTE9	COUNT_23	COUNT_22	COUNT_21	COUNT_20	COUNT_19	COUNT_18	COUNT_17	COUNT_16

## BYTE0:

Indicator	Description	
bit7	Reserve	
bit6	1 Open Circuit Detected	0 No Open Circuit Detected
bit5	1 Short Circuit Detected	0 No Short Circuit Detected
bit4	1 The switch count has reached the upper threshold	0 The switch count donot reach the upper threshold
bit3:bit2	0:0	Electronics power supply Normal
	0:1	Electronics power supply Over Voltage
	1:0	Electronics power supply Under Voltage
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	0:1	Valves power supply Over Voltage
	1:0	Valves power supply Under Voltage

### BYTE1: BYTE3

Sc-0 corresponds to the short circuit of channel 0, SC-23 corresponds to the short circuit of channel 23, and so on to know the short circuit of each channel. Bit value: 1 Short circuit, 0 indicates no short circuit.

### BYTE4: BYTE6

OC-0 corresponds to the open status of channel 0, OC-23 corresponds to the open status of channel 23, and so on to know the open status of each channel. The Bit value is 1 Open circuit, and 0 indicates no open circuit.

### BYTE7: BYTE9

Count-0 indicates the open status of channel 0, count-23 indicates the open status of channel 23, and so on to know the open status of each channel. The Bit value is 1 Open circuit, and 0 indicates no open circuit.

## 4.2 Output List

	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
BYTE0	SC_7	SC_6	SC_5	SC_4	SC_3	SC_2	SC_1	SC_0
BYTE1	SC_15	SC_14	SC_13	SC_12	SC_11	SC_10	SC_9	SC_8
BYTE2	SC_23	SC_22	SC_21	SC_20	SC_19	SC_18	SC_17	SC_16

O\_0~O\_23: O\_0 indicates Channel 0, O\_23 indicates Channel 23, and so on to know the location of other channels.

## Manifold Adapters

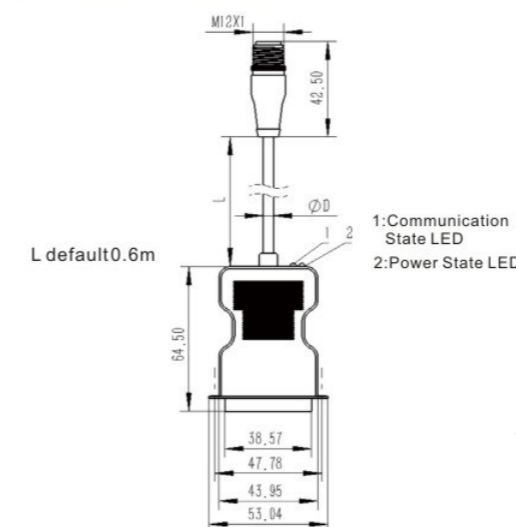
### FEATURES

The Valve Manifold Adapter VTA-H24-COM13 is an IO-Link device for installed on DB25-connected valve manifold. It is a signal conversion module that converts the DB25 connection into an IO-Link connection. It adopts a 3-wire connection with an IO-Link Type- A port, and supports the drive of 24 solenoid valves, with a total drive current of no more than 1.6A, and a maximum of 500mA for a single circuit. The adapter is powered from the IO-Link master. Applicable to valve terminals with 13-pin DB25 connector as the common end.

### SPECIFICATION

Model No.	VTA-H24-COM13
IO-Link version	V1.1.3
Rate	COM2(38.4k)
Min. cycle time	3.5ms
Process data	4 bytes
Display/Running	Green LED
Configurable Inputs & Outputs	NO
Working Voltage	18~30VDC
Total current (actuator)	1.6A
Quiescent current	30mA
Typical Working Voltage	24VDC
Actuator connection port	DB25
Sensor connection port	M12x1
Wire	0.6m*0.34mm <sup>2</sup>
Shell material	PA
Sheath material	PUR
Protection class	IP40
Operating temperature	10~55°C
Storage temperature	25~70°C
Mechanical dimensions	62mm*52mm*12mm

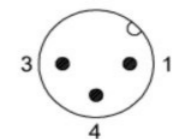
### Dimension Graphy



### Connection method



PIN1~12,14~25:output  
PIN13:0V



IO-Link Connector  
PIN1:+24V,Controller+valve  
PIN3:0V  
PIN4:IO-Link