ELCO
INDUSTRIAL AUTOMATION

MVTG Integrated Input-Output Valve Terminal

MVTG-2025.07 V1.0

MVTG Integrated Input-Output Valve Terminal

Performance Feature

- It can accommodate 16 IO modules. The module part can be used independently and the input/output power system is separate.
- Support hot swapping, point-based diagnosis, and point-based protection.
- With LED display and quick obstacle clearance.
- Supports FSU, MRP, WEB server functions, self-diagnosis function, S2 redundancy and other functions.
- It supports a maximum of 24 valve positions and 48 electromagnetic heads. Eight types of electromagnetic valves can be configured to meet various configuration requirements.
- Single-pole electrically controlled solenoid valve can be equipped with safety functions.
- The electromagnetic valve is small in size but has a high current capacity, with a flow rate 28% higher than that of competing products of the same size.
- Pressure zoning allows the same valve island to handle both high and low pressures, thereby reducing the pressure of the main gas source and lowering the customer's costs.
- Internal and external pilot conversion. The external pilot can be used for negative pressure. The pressure zones can be increased, enabling the use of both positive and negative pressures together.

MVTG Integrated Input-Output Valve Terminal

Configure The List

MVTG- 14- PNM I- Q6L- UL- 4M4B2C2TC- 12Q6- XS

001 002 003 004 005 006 007 008 009

001	Valve terminal
MVTG	MVTG series

002	Size
14	The valve width is 14 mm

003	communication module
PNM	PN module, M12 interface
PNR	PN module, AIDA, RJ45 push-pull socket
PNS	PN module, AIDA, SCRJ push-pull socket

004	Pilot method
I	Inner pilot
E	External pilot

005	Air intake port
Q6	Straight push-in fitting 6 mm
Q8	Straight push-in fitting 8 mm
Q10	Straight push-in fitting 10 mm
Q12	Straight push-in fitting 12 mm
LQ6	L-shaped quick connector 6mm
LQ8	L-shaped quick connector 8mm
LQ10	L-shaped quick connector 10mm
LQ12	L-shaped quick connector 12mm
G14	G1/4 screw thread
	Air intake position
B	Air intake at both ends
L	Left air intake
R	Right air intake

006	Exhaust port
U	Muffler
G14	G1/4 screw thread
	Exhaust position
B	Exhaust at both ends
L	Left side exhaust
R	Right side exhaust

007	Valve function
M	5/2-way valve, single solenoid, mechanical spring return
S	5/2-way valve, single solenoid, mechanical spring return,With safety features
B	5/2-way valve, double solenoid
E	5/3-way valve, mid-position exhausted
P	5/3-way valve, mid-position pressurised
C	5/3-way valve, mid-position closed
TC	2x 3/2-way valve, normally closed, mechanical spring return
TO	2x 3/2-way valve, normally open, mechanical spring return
TB	2x 3/2-way valve, 1x normally open, 1x normally closed, mechanical spring return
N	Empty valve position

008	Working port
C	Blanking plug
Q4	Straight push-in fitting 4 mm
Q6	Straight push-in fitting 6 mm
Q8	Straight push-in fitting 8 mm
Q4C	Straight push-in fitting 4 mm, blanking plug
Q6C	Straight push-in fitting 6 mm, blanking plug
Q8C	Straight push-in fitting 8 mm, blanking plug
G18	G1/8 thread
FP18	External G1/8 adapter to internal G1/8 adapter block

009	Pressure zone location
—	not
X	Create a pressure zone behind the X valve position
	Pressure zone
S	Air source 1 port with pressure partition
U	Air source 3 and 5 ports with pressure partition
G	Air source 1/3/5 ports are equipped with pressure zones

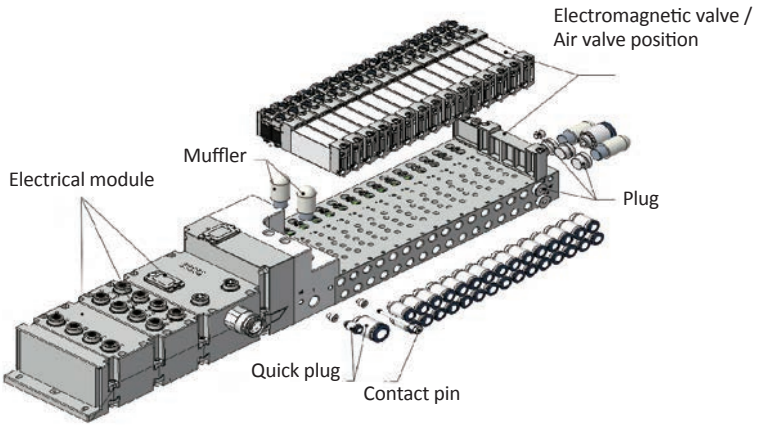
Note: The external leading port uses the M5-Q6 connector and can be installed on both the left and right sides.
Note: The fixed end plate on the left side of the valve drive module does not need to be selected.
Note: For information not included in the configuration list, please make a note or call the sales department for consultation.
Note: The left expansion module needs to be ordered separately.

MVTG Integrated Input-Output Valve Terminal

Key Features

Electrical Module

Communication module: Profinet
Digital input module: 16 points
Digital output module: 8 points
Can be expanded up to 16 bits, connected in different sequences

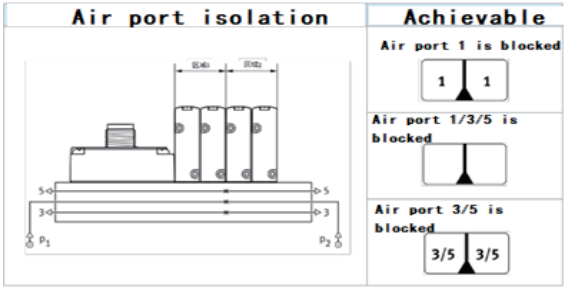


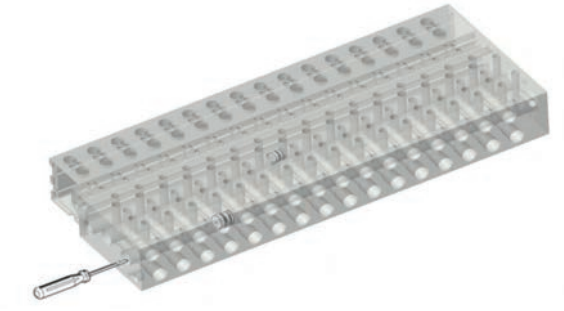
Electromagnetic valve with overall control function

Overall control function: This solenoid valve can control whether the other solenoid valves on the valve plate can operate normally.

Two pressure zones can be created

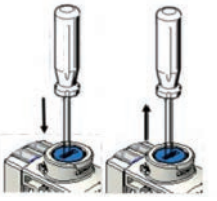
Pressure zones can be applied to air inlets 1, 3, and 5.



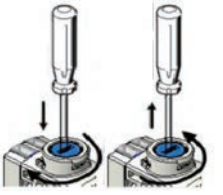


Manual operation

Manual operation methods: non-locking button type and locking knob type.



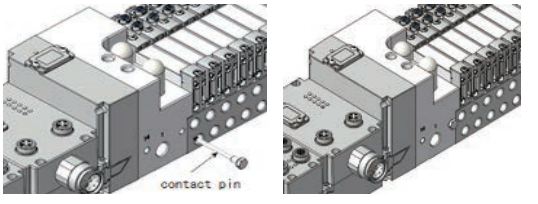
Button type



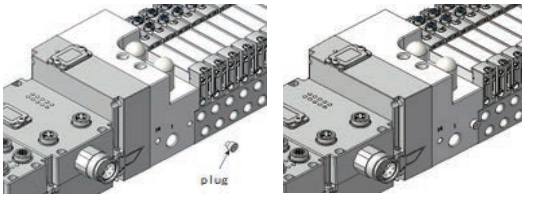
Locking type

Internal and External Leading Functions

Replacing the pins and plugs enables the conversion between internal and external pilot functions.



External lead



Internal lead

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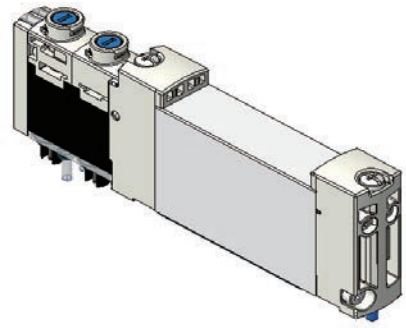
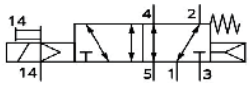
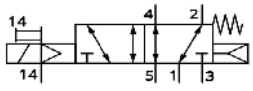
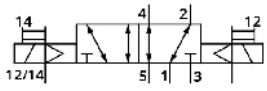
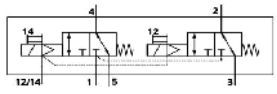
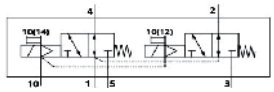
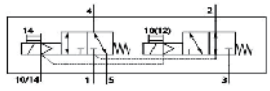
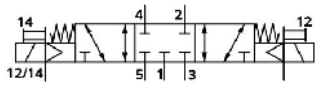
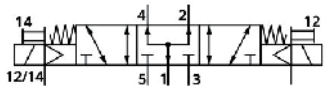
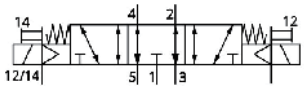
Solenoid Valve Characteristics

Example sub-base valves
The valve width is 14mm
Air ports 1, 3 and 5 and working ports 2 and 4 are all connected with corresponding holes on the gas circuit plate



Solenoid Valve Function Overview

Valve type	Schematic	Valve description
M52-M		5/2-way valve, single solenoid, Mechanical spring return
M52-S		5/2-way valve, single solenoid, Mechanical spring return,With safety features
B52		5/2-way valve, double solenoid
T32C-M		2x 3/2-way valve, Normally closed, mechanical spring return
T32O-M		2x 3/2-way valve, Normally open, mechanical spring return
T32B-M		2x 3/2-way valve, 1x normally open, 1x normally closed, mechanical spring return
P53C		5/3-way valve, Mid-position closed
P53P		5/3-way valve, Mid-position pressurised
P53E		5/3-way valve, Mid-position exhausted

MVTG Integrated Input-Output Valve Terminal

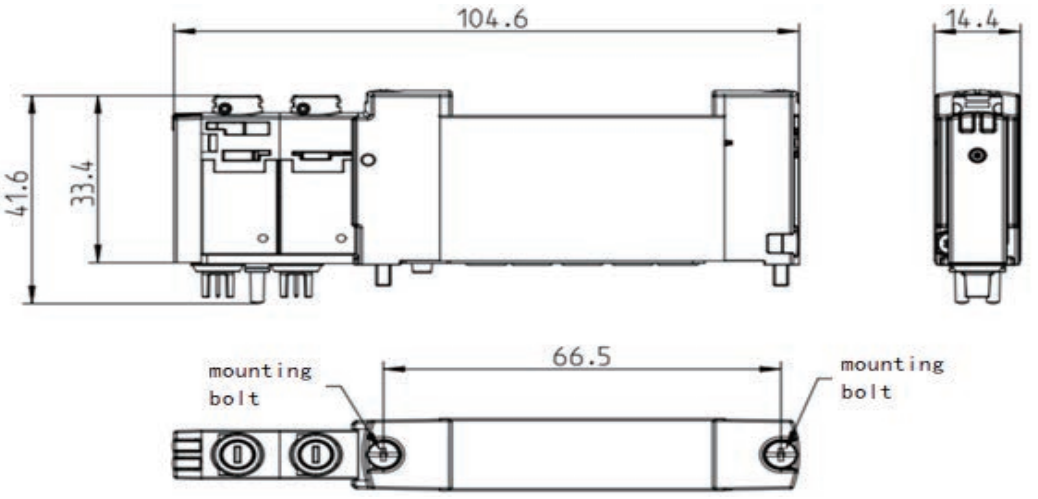
Datasheet

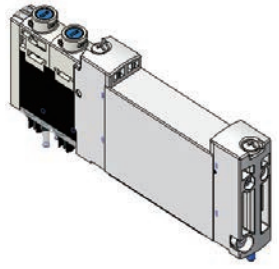
General technical data	M52-M	B52	T32	P53
Ambient temperature (°C)	-5~50			
Storage temperature (°C)	-5~50			
Sealing principle	Soft			
Pilot air supply	External			
Type of actuation	Piloted,Electrical			
Manual override	Button type/Locking type			
Type of mounting	Any			
Mounting position	LED			
Signal status indication				
Standard nominal flow rate (l/min)**	773	773	620	652
Switching time Open (ms)*	14	-	24	16.2
Switching time close (ms)*	45	-	38	52.3
Switching time reversal (ms)*	-	12	-	31.6
Operating pressure (Internal pilot air supply) (Mpa)	0.2~0.8	0.15~0.8	0.2~0.8	0.2~0.8
Operating pressure (External pilot air supply) (Mpa)	-0.09~0.8	-0.09~0.8	-0.09~0.8	-0.09~0.8
External pilot pressure (Mpa)	0.2~0.8	0.15~0.8	0.2~0.8	0.2~0.8
Product weight (g)	79	85	85	86
Protection rating	IP65			
Operating voltage (V DC)	24±10%			
Power (W) (Energy-saving circuit)	1.2 (0.45)			
Sustainable electricity rate (%)	100			

* This time is the response time at the solenoid level

MVTG Integrated Input-Output Valve Terminal

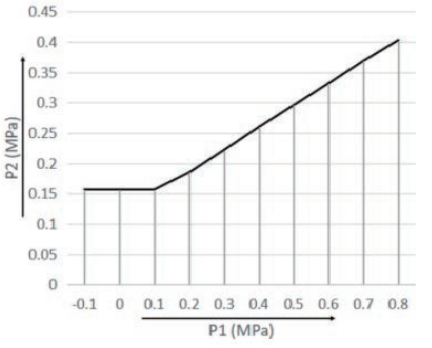
Electromagnetic Valve Size



Sub-base valve	Description	Type
	5/2-way valve, single solenoid, Mechanical spring return	VG-B14-M52-ME-F-24
	5/2-way valve, single solenoid, Mechanical spring return,With safety features	VG-B14-M52S-ME-F-24-0.65
	5/2-way valve, double solenoid	VG-B14-B52-E-F-24
	5/3-way valve, Mid-position closed	VG-B14-P53C-ME-F-24
	5/3-way valve, Mid-position exhausted	VG-B14-P53E-ME-F-24
	5/3-way valve, Mid-position pressurised	VG-B14-P53P-ME-F-24
	2x 3/2-way valve, Normally closed, mechanical spring return	VG-B14-T32C-ME-F-24
	2x 3/2-way valve, 1x normally open, 1x normally closed, mechanical spring return	VG-B14-T32B-ME-F-24
	2x 3/2-way valve, Normally open, mechanical spring return	VG-B14-T32O-ME-F-24

Valve Terminal Characteristics

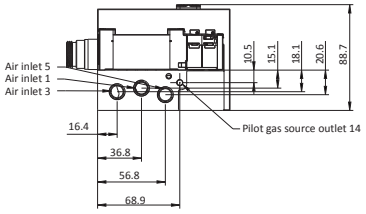
Operating voltage (V DC)	24±10%
Vibration resistance rating	2 (EN60068-2-6)
Impact resistance rating	2 (EN60068-2-27)
Protection rating	IP65

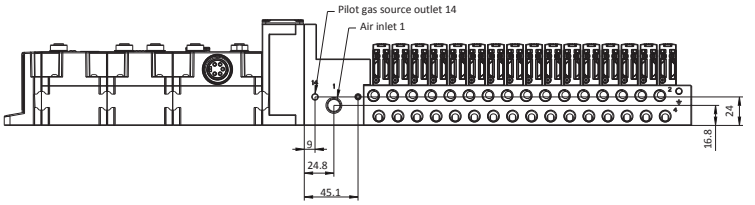


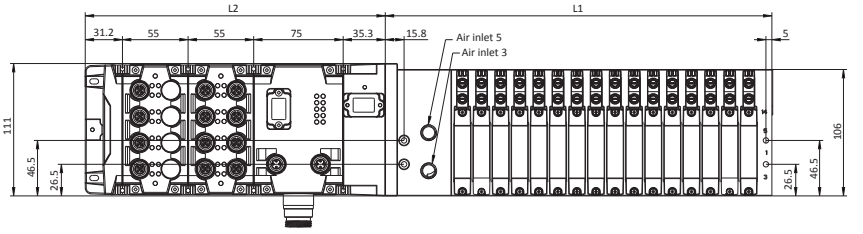
MVTG Integrated Input-Output Valve Terminal

Dimensions

Dimensions - side outlet valve terminals







L1 dimensions for different valve numbers

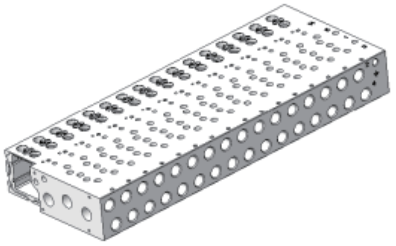
Valve number	L1 size (mm)
4	132
5	148
6	164
7	180
8	196
9	212
10	228
12	260
16	324
20	388
24	452

L2 size corresponding to different numbers of IO modules

(applicable only to M12 bus modules)

L2 = 35.3 + 75 + 31.2 + 55 * Number of modules

Manifold Rail Model

Manifold rail	Description	Type
	4 valve positions	VG-L1-14W-4-GR-C
	5 valve positions	VG-L1-14W-5-GR-C
	6 valve positions	VG-L1-14W-6-GR-C
	7 valve positions	VG-L1-14W-7-GR-C
	8 valve positions	VG-L1-14W-8-GR-C
	9 valve positions	VG-L1-14W-9-GR-C
	10 valve positions	VG-L1-14W-10-GR-C
	12 valve positions	VG-L1-14W-12-GR-C
	16 valve positions	VG-L1-14W-16-GR-C
	20 valve positions	VG-L1-14W-20-GR-C
	24 valve positions	VG-L1-14W-24-GR-C

MVTG Integrated Input-Output Valve Terminal

Module

Communication module			
Profibus communication module		Type	MVT-EX-PN
		Description	Profibus communication module
		Protocol	ProfiNet
		Field bus, connection system	2*M12, D-CODE, 4 pin, female
		Transmission speed	100 Mbit/s
		Max. address volume, inputs	1440 Byte
		Max. address volume, outputs	1440 Byte
		Ring Network Redundancy Function (MRP)	yes
		Power supply, connection system	7/8'' 5 pin, male
		Maximum number of expandable I/O modules	16
		Protection class	IP65
Digital input module			
16-channel input module, PNP type, 8 * M12		Type	MVT-DI16P-M12
		Description	16-channel input module, PNP type, 8*M12
		Input channel	16
		Input type	PNP
		Input power supply current	Each channel maximum 200 mA
		Process data length	2 Byte
		Signal connection system	8*M12, female, A-CODE, 5 pin
		Protection class	IP65
Digital output module			
8-channel output module, PNP type, 4*M12		Type	MVT-DO8P-M12
		Description	8-channel output module, PNP type, 4*M12
		Output channel	8
		Output type	PNP
		Output power supply current	Maximum 500 mA per channel
		Process data length	1 Byte
		Signal connection system	4*M12, female, A-CODE, 5 pin
		Protection class	IP65
linking module			
linking module		Type	MVT-AP
		Description	Electromagnetic valve drive module
		Maximum number of supported valve positions	24
		Electric drive	fieldbus
		Electrical interface	Through MVT
		Output power supply current	Maximum 200 mA per channel
		Process data length	6 bytes, configurable
		Protection class	IP65

MVTG Integrated Input-Output Valve Terminal

Accessories

Quick Connector	Description		Type
	M5 thread	Suitable for air tubes with a diameter of Ø 4 mm	FP-M5-Q4-P10
		Suitable for air tubes with a diameter of Ø 6 mm	FP-M5-Q6-P10
	G1/8 thread	Suitable for air tubes with a diameter of Ø 4 mm	FP-G18-Q4-P10
		Suitable for air tubes with a diameter of Ø 6 mm	FP-G18-Q6-P10
		Suitable for air tubes with a diameter of Ø 8 mm	FP-G18-Q8-P10
	G1/4 thread	Suitable for air tubes with a diameter of Ø 6 mm	FP-G14-Q6-P10
		Suitable for air tubes with a diameter of Ø 8 mm	FP-G14-Q8-P10
		Suitable for air tubes with a diameter of Ø 10 mm	FP-G14-Q10-P10
		Suitable for air tubes with a diameter of Ø 12 mm	FP-G14-Q12-P10
Empty valve position			
	Empty valve position, width of 14 mm		VG-B14
Lead-in switching screw			
	Lead-in switching screw		VTG-14
White muffler			
	G1/4 thread		FM-1/4/W
Sensor adapter block			
	For sensor adapter use		FP-G18-G18
Transfer block			
	For the connection between the pneumatic part and the electrical module part		VTC-14-T
Separator			
	Specification G1/4		VTG-14-S
Metal Plug			
	G14 Metal Plug		FB-G14-P10
	G18 Metal Plug		FB-G18-P10
	M5 Metal Plug		FB-M5-P10
Power cord			
	Straight single-ended pre-cast hole end 7/8'', 5 meters		105000A01M050
Line of communication			
	RJ45/M12 dual-ended pre-embedded, 5 meters		E16DA4002M050
	M12/M12 Dual-End Pre-Injected, 5 meters		E11D04002M050

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