

Series D valve islands, Size 1, Multipole and Fieldbus

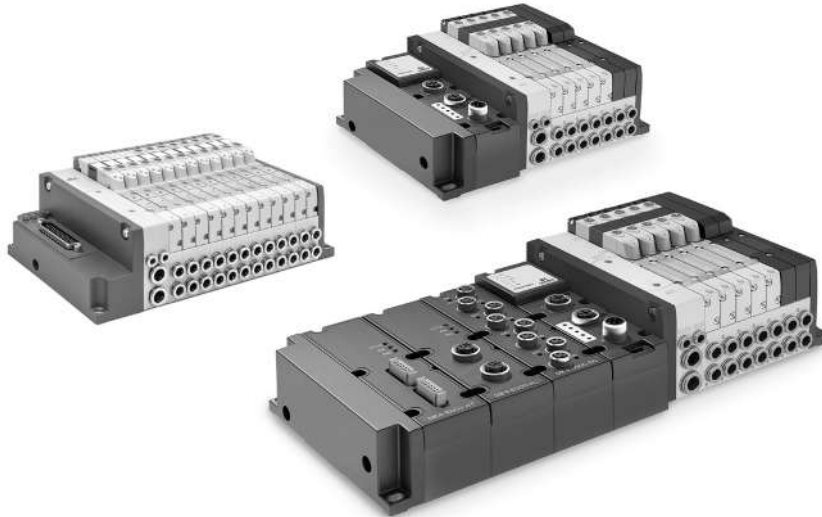
New

Fieldbus connection with the most common communication protocols

PROFIBUS-DP, PROFINET, CANopen , EtherNET/IP , EtherCAT and IO-Link

Multipole connection with 25 or 44 pins

Valve functions: 2x3/2; 5/2; 5/3 CC, CO, CP



- » Valve size 10,5 mm
- » Compact design
- » Individual modular subbases in technopolymer
- » Highly expandable electrically and pneumatically
- » Flexibility in connecting and exchanging I/O modules
- » COILVISION technology to monitor performance parameters
- » Same subbase for monostable and bistable valves
- » Possibility to transmit operational data through WLAN
- » Blinking LEDs indicating different types of operating faults

Thanks to the large range of options available, the Series D valve island represent an excellent solution for all those applications that require pneumatic and electrical functions in restricted spaces.

The different electrical connection possibilities allow to create Islands with a high number of valve positions and different pressure zones. Moreover, the fieldbus version can manage both digital and analog electric input and output signals.

Small dimensions, high flows, subbases with individual pneumatic and electric modules, an easy subbase connection system, constant diagnosis and monitoring of performance parameters make this series a particularly innovative product.

One of the features of this series is the monitoring function regarding the correct operating of the solenoid valve.

The electronics installed both in the subbase and in the Sub-D and multi-serial connection module, enables to constantly monitor the efficiency of the driving coil of the solenoid valve.

Possible variations with respect to the ideal operating conditions, for example a higher power consumption, variation in response times and an increased temperature are indicated through different ways of blinking by the LED on the solenoid valve and by an electric alert signal that is sent to the PLC through the Sub-D module connecting cable or, in case of the multi-serial connection module, directly through the communication protocol.

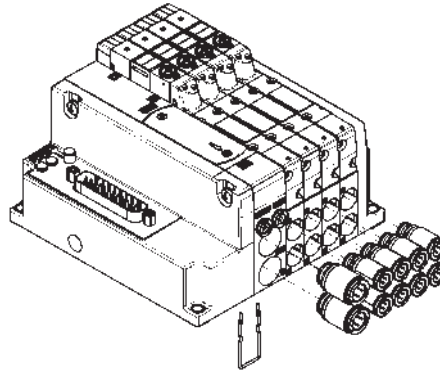
Manual, instruction sheet and configurator are available on the site <http://catalogue.camozzi.com> or by means of the QR code on the product's label.

GENERAL DATA

PNEUMATIC SECTION	
Valve construction	spool with seals
Valve functions	5/2 monostable and bistable 5/3 CC, CO, CP 2x3/2 NC 2x3/2 NO 1x3/2 NC + 1x3/2 NO
Materials	spool: AL spool seals: HNBR other seals: NBR body: AL end caps: polymer subbase size 1: polymer
Connections	outlet 2 and 4, size 10,5 mm: tube Ø 4, tube Ø 6 supply 1: tube Ø 8 supply 12/14: tube Ø 4 exhaust 3 and 5: tube Ø 8 exhaust 82/84: tube Ø 4
Temperature	0 ÷ 50°C
Air characteristics	compressed, filtered and non-lubricated air in class [7:4:4] according to ISO 8573-1:2010. In case lubrication should be necessary, only use oils with a maximum viscosity of 32 Cst and the version with external servo-pilot supply. The air quality of the servo-pilot supply must be of class [7:4:4] according to ISO 8573-1:2010 (do not lubricate).
Valve sizes	1 = 10.5 mm
Operating pressure	-0,9 ÷ 10 bar
Pilot pressure	3 ÷ 7 bar 4,5 ÷ 7 bar (with operating pressure exceeding 6 bar for the version 2x3/2)
Flow rate	250 NL/min
Mounting position	any position
Protection class	IP 65
ELECTRICAL SECTION MULTIPOLE VERSION	
Type of Sub-D connector	25 or 44 pins
Max. absorption	0.8 A (with Sub-D connector 25 pins) 1 A (with Sub-D connector 44 pins)
Supply voltage	24 V DC +/- 10%
Max. number of coils to operate	22 on 11 valve positions (with Sub-D connector 25 pins) 38 on 19 valve positions (with Sub-D connector 44 pins)
Signalling LED	Multipole: green LED - presence of power red LED - anomaly Valve: yellow LED - presence of power blinking yellow LED - operating fault
ELCTRICAL SECTION FIELDBUS VERSION	
General data	see Multi-serial Modules section on the next pages
Max. absorption	2.5 A
Supply voltage	24 V DC +/-10% logic supply 24 V DC +/-10% power supply
Max. number of coils to operate	128 on 64 valve positions
Max. number of digital inputs	128
Max. number of analog inputs	16
Max. number of digital outputs	128
Max. number of analog outputs	16
IO-Link version	
Max n° of coils to operate	64 on 32 valve positions
Input and Output	No
Type of port	Class B
IODD Configuration file	up to 12, 24 or 32 valve positions per island
(The IO-Link module on the valve island is auto-configured to operate with the right IODD)	
More information can be found at http://catalogue.camozzi.com Series D "Instructions for use and maintenance"	

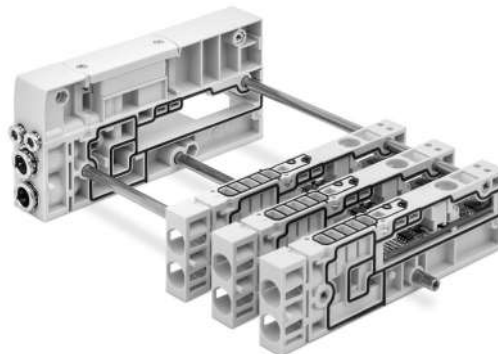
PNEUMATIC CONNECTION

The subbases, in their different configurations, include tube connection cartridges. Through the removal of fixing clips it is possible to replace these cartridges and adapt them to the necessary dimension. The pneumatic part is the same for both the Multipole and Serial version. The tie rods with different fixed lengths that unite the subbases, can be extended individually through additional tie rods for odd positions.



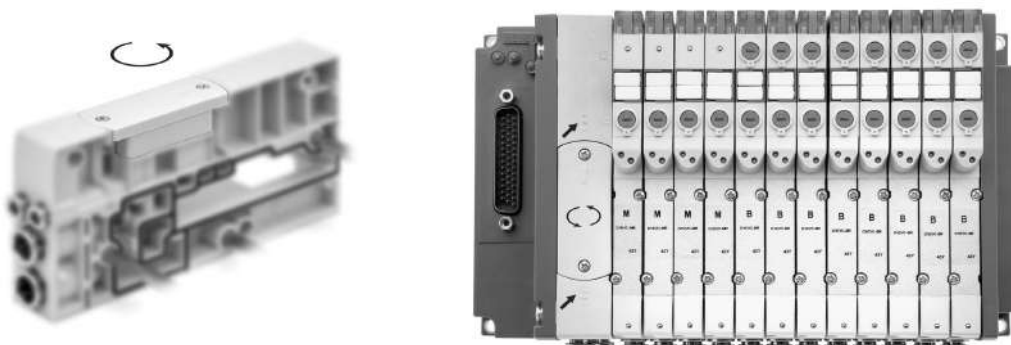
INTERMEDIATE SUBBASES

Intermediate subbases with a diaphragm or additional supply function allow to create diversified pressure and/or exhaust zones, add an incoming air flow and increase the exhaust flow. Furthermore there are subbases available that, besides the aforementioned functions, can interrupt the pneumatic actuation to the coils. This prevents, independently of the electric signal being present or not, to actuate the monostable and bistable valves. The intermediate subbases do not need to be calculated in the number of valve positions.



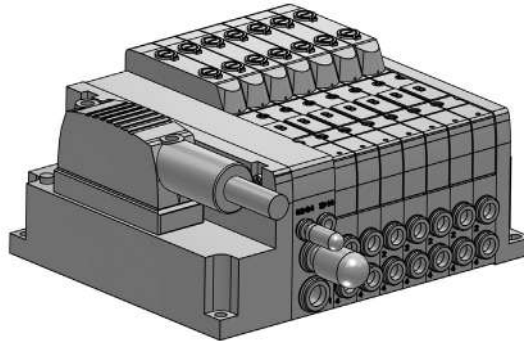
SERVOPILOT

The initial supply and exhaust base can be changed through rotating the upper device of the selected type of servo-pilot. The change from internal to external servo-pilot is obtained without replacing the initial base, this allows for example to include or section the island, adapting its operation also after its installation, for example with valves that operate with vacuum or reduced pressures. The arrow indicates the selected type of servo-pilot.



CONFIGURATOR

The island configuration is of minimum three positions including the possible base for additional supply and/or exhaust. The maximum number of positions depends on the selected type of electrical connection. To correctly compose the commercial code and to download drawings, please use the configurator present at <http://catalogue.camozzi.com> in the sections "Configurators" or "Camozzi Partcommunity".



MULTIPOLE VERSION

The multipole version can be connected quickly and safely through the connecting cable with angled outlet of 25 or 44 pins to the electric Sub-D connector integrated in the island. The single modularity of the subbases allows to create islands with up to a maximum of 11 or 19 valve positions according to the type of connecting cable used.



FIELD BUS and IO-LINK VERSION

The new CX4 fieldbus module integrated in the Series D valve island enables to interface with the most common fieldbus protocols. Besides managing the pneumatic part (the same as the Multipole version) different kinds of electric modules can be managed. With this configuration it is possible to enlarge the pneumatic part up to a maximum of 64 valve positions with double command and the electric part up to 128 digital inputs and 128 digital outputs, besides 16 analog inputs and 16 analog outputs. Besides the standard voltage and current versions, the analog modules are also available in 2-channel Bridge, RTD and TC versions.

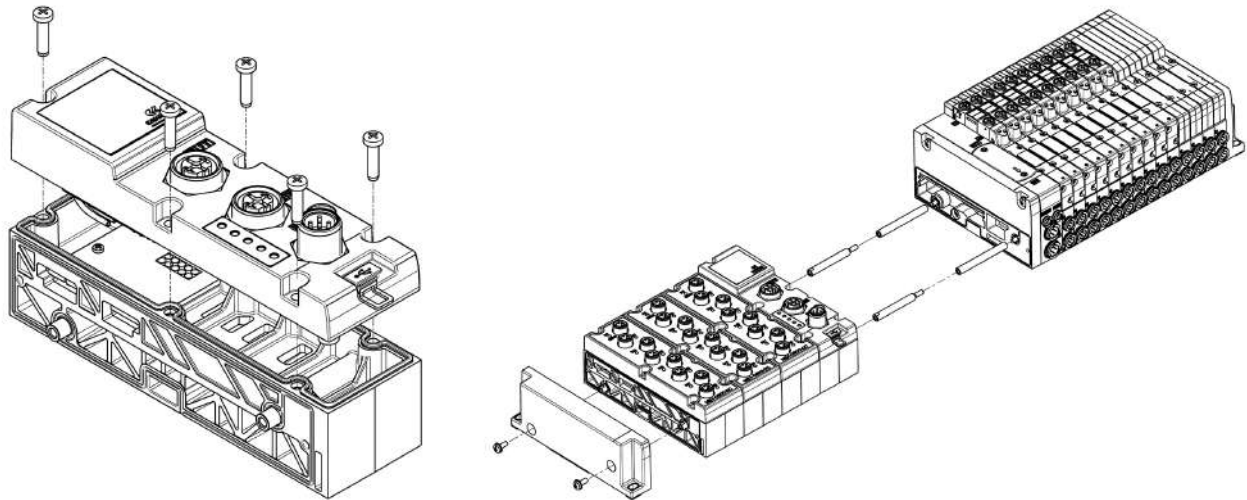
Also in the IO-Link version, the interface module is part of the Series CX4.

In this configuration, the I/O Modules cannot be integrated in the island, a maximum of 64 coils can be managed on 32 valve positions.



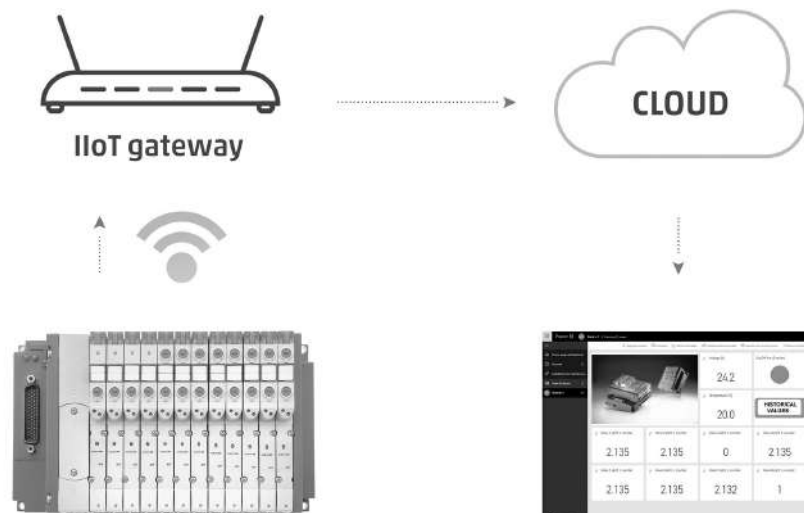
ELECTRICAL MODULE

The electric modules are composed of two parts: the base to connect the different modules, which is the same for all types, and different covers on which the connectors are positioned. This solution enables to easily change the connection points with the sensors or functions of the machine. Also the electric modules, like the subbases in the pneumatic part, can be added or removed thanks to the modular connection system.



COILVISION

This is a standard function in all our valve islands with Multipole and Serial connection. Its purpose is to monitor the proper function of each solenoid valve individually, particularly the solenoid. The electronics installed in the subbase allows to constantly monitor the efficiency of the driving coil of the solenoid valve. Possible variations with respect to the ideal operating conditions, like for example a higher power consumption, different response times or an increased temperature, are reported by means of a blinking yellow LED of the interested solenoid. Besides the blinking of this LED, also a general red LED blinks located on the Sub-D module. These indications are combined with an alert message sent to the PLC. By selecting code W from the "Interface" menu of the encryption code, besides the described signals, it is possible to gather all operational data of the islands and send them through WLAN to the corporate net or onto the Cloud to be analysed.



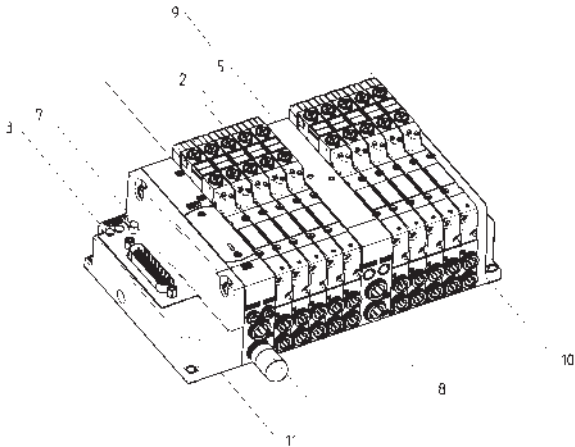
CODING EXAMPLE - MULTIPOLE VERSION

DM	C	1	M	W	R	A	-	15R	-	5BX5B	-	4B3C3V	-	CS	R
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DM	MODULAR ISLAND
C	VALVE C = VC Model
1	SIZE 1 = 10,5 mm
M	ELECTRICAL CONNECTION M = Multipole 25 pin PNP Q = Multipole 44 pin PNP
W	INTERFACE O = without interface W = WLAN
R	MANUAL OVERRIDE P = push button R = with push and turn device
A	SERVO-PILOT SUPPLY A = internal B = external
15R	CONNECTOR 0 = without connector CONNECTOR R WITH CABLE 03R = 3 mt 05R = 5 mt 10R = 10 mt 15R = 15 mt 20R = 20 mt 25R = 25 mt
5BX5B	SUBBASES DIAPHRAGM A = cartridges tube Ø4 B = cartridges tube Ø6 SUBBASE* Q = diaphragm on channels 1, 3, 5 R = diaphragm on channel 1 S = diaphragm on channels 3 and 5 WITH DIAPHRAGM AND EXTERNAL SERVO-PILOT SUPPLY* QT = diaphragm on channels 1, 3, 5; 12/14 external RT = diaphragm on channel 1; 12/14 external ST = diaphragm on channels 3, 5; 12/14 external WITH DIAPHRAGM AND INTEGRATED SILENCER* QH = diaphragm on channels 1, 3, 5 RH = diaphragm on channel 1 SH = diaphragm on channels 3, 5 SUBBASE FOR ADDITIONAL FLOW* X = supply (1) and exhausts (3, 5) XH = supply (1) and exhausts (3, 5) with integrated silencer INTERFACE SUBBASE FOR ADDITIONAL FLOW WITH EXTERNAL SERVO-PILOT SUPPLY* XT = additional supply (1) and exhausts (3, 5) FOR ELECTRICAL SUPPLY* K = separation of electrical supply * = These subbases are already provided with cartridges for tube Ø8
4B3C3V	VALVES M = 5/2 monostable B = 5/2 bistable C = 2X3/2 NC A = 2 X 3/2 NO G = 2 X 3/2 (NC+NO) V = 5/3 CC K = 5/3 CO N = 5/3 CP L = free position
CS	TERMINALS AND PLATES Tube dimensions for port sizes 1,3,5 C = cartridge Ø 8 CS = cartridge Ø 8 3,5 with silencers
R	FIXING TYPE = direct R = DIN rail

The choice of the cartridge made in the Terminal Plates section is also valid for the diaphragm and additional sub-bases

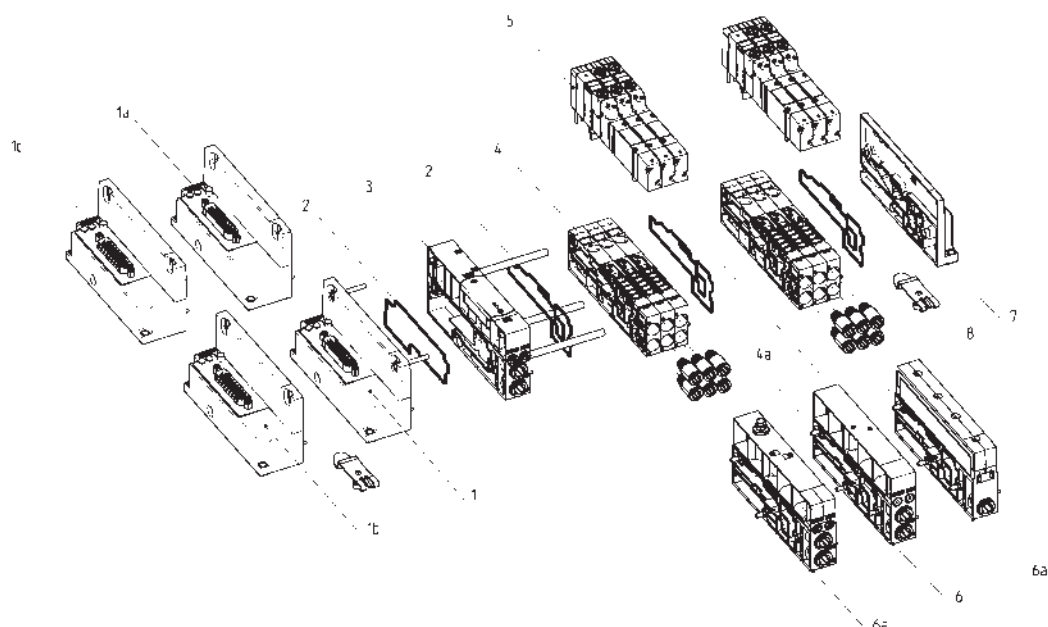
CODING MULTIPOLE VERSION



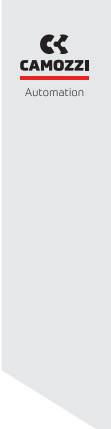
1	2	3	4	5	6	7	8	9	10	11
D	M	C	1	M	W	R	A	1	5	R
-	5	B	X	S	3	-	4	B	3	C
-	3	V	-	C	S	R				

(1)	VALVE MODEL VC	(2)	SIZE	(3)	ELECTRICAL CONNECTION	(4)	INTERFACE	(5)	MANUAL OVERRIDE	(6)	SERVO-PILOT
	DMC	1			M Q		O W		P R		A B
(7)	CONNECTION	(8)	SUBBASES DIAPHRAGM	(9)	VALVES	(10)	TERMINAL PLATES	(11)	MOUNTING		
	0		A		M		C		R		
	03R		B		B		CS				
	05R		SUBBASES		C						
	10R		Q		A						
	15R		R		G						
	20R		S		V						
	25R		WITH DIAPHRAGM AND EXTERNAL SERVO-PILOT SUPPLY		K						
			QT		N						
			RT		L						
			ST								
			WITH DIAPHRAGM AND INTEGRATED SILENCER								
			QH								
			RH								
			SH								
			SUBBASE FOR ADDITIONAL FLOW								
			X								
			XH								
			INTERFACE SUBBASE FOR ADDITIONAL FLOW WITH EXTERNAL SERVO-PILOT SUPPLY								
			XT								
			FOR ELECTRICAL SUPPLY								
			K								

MULTIPOLE version COMPONENTS

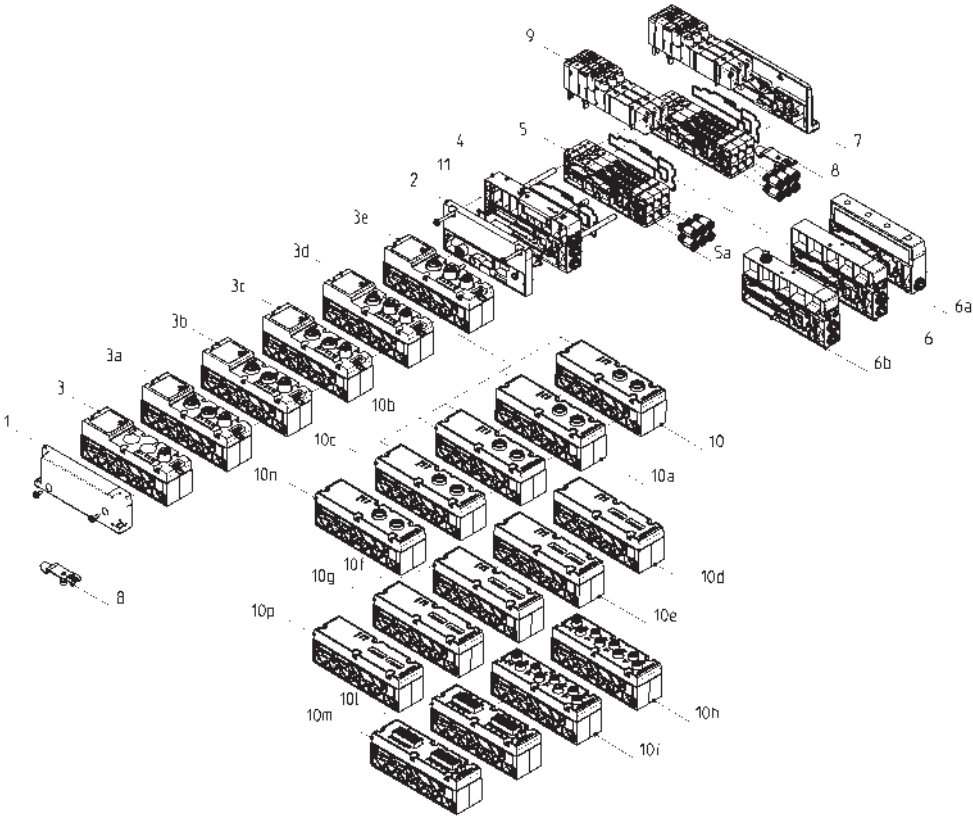


COMPONENTS	
1	Electric interface group - multipole 25 pins
1a	Electric interface group - multipole 25 pins WLAN interface
1b	Electric interface group - multipole 44 pins
1c	Electric interface group - multipole 44 pins WLAN interface
2	Interface seals
3	Initial pneumatic supply module
4	Modular subbase size 1
4a	Interchangeable quick-release couplings
5	Solenoid valve size 1
6	Additional module to convey supply and exhaust channels
6a	Module to supply and to silence the exhaust channel
6b	Module to separate electrical supply
7	Terminal plate
8	Mounting bracket for DIN rail



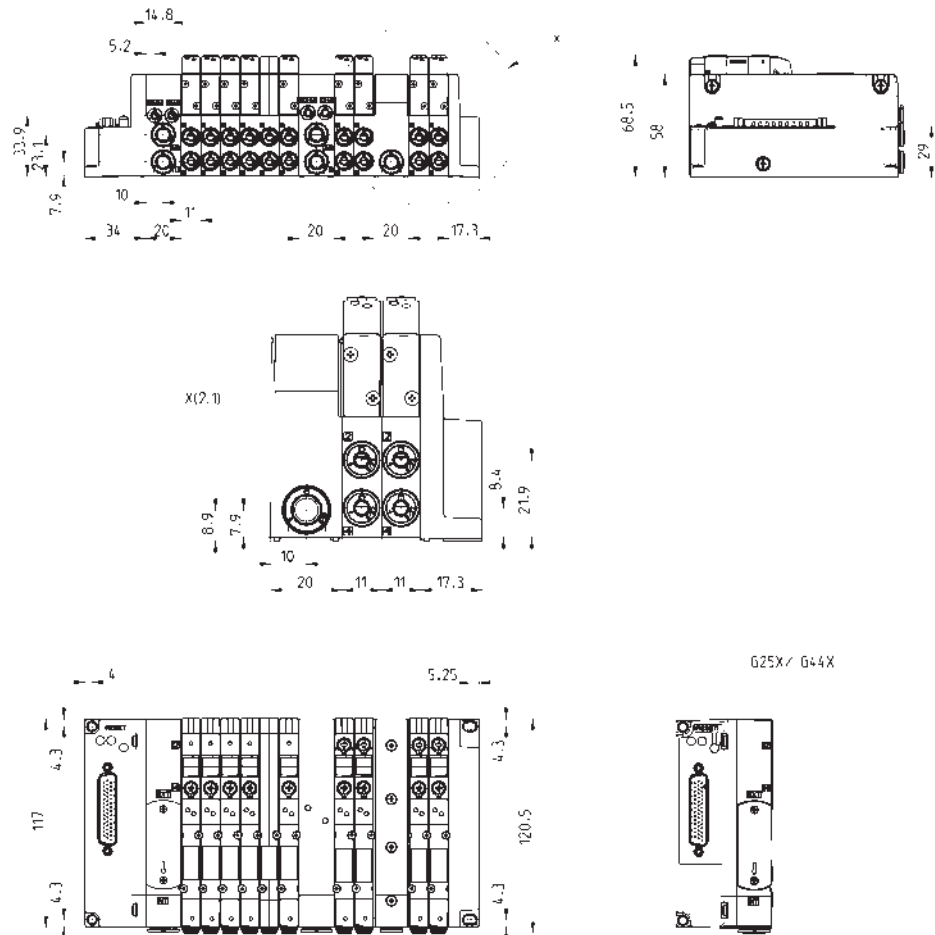
FIELD
BUS version COMPONENTS

SERIES D1 VALVE ISLANDS



COMPONENTS			
1	Terminal module	9	Solenoid valve size 1
2	Fieldbus module interface	10	2 Analog voltage/current Inputs, M12
3	IO-Link module	10a	2 Analog load cell Inputs, M12
3a	PROFINET module	10b	2 Analog thermocouple Inputs, M12
3b	EtherCAT module	10c	2 Analog RTD Inputs, M12
3c	EtherNet/IP module	10d	2 Analog voltage/current Inputs, terminal block
3d	CANopen	10e	2 Analog load cells Inputs, terminal block
3e	PROFIBUS module	10f	2 Analog thermocouple Inputs, terminal block
4	Initial pneumatic supply module	10g	2 Analog RTD Inputs, terminal block
5	Modular subbase size 1	10h	8 Digital Inputs
5a	Interchangeable quick-release couplings	10i	8 Digital Outputs
6	Additional module to convey supply and exhaust channels	10l	16 Digital Inputs
6a	Module to supply and to silence the exhaust channel	10m	16 Digital Outputs
6b	Module to separate electrical supply	10n	10n = 2 analog outputs, M12
7	Terminal plate	10p	10p = 2 analog outputs, terminal block
8	Mounting bracket for DIN rail		

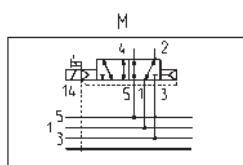
MULTIPOLE version 25 and 44 pin DIMENSIONS



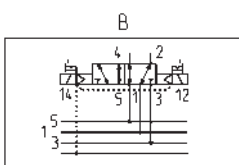
CODING EXAMPLE

D	1	E	VC	-	M	P
D	SERIES					
1	SIZE: 1 = 10,5 mm					
E	VERSION: E = solenoid valve					
VC	COMPONENT: VC = plugin valve					
M	TYPE OF SOLENOID VALVE M = 5/2 monostable B = 5/2 bistable C = 2 x 3/2 NC A = 2 x 3/2 NO G = 2 x 3/2 (NC+NO) V = 5/3 CC K = 5/3 CO N = 5/3 CP					
P	MANUAL OVERRIDE: P = push button R = with push and turn device					

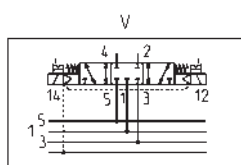
AVAILABLE FUNCTION - SYMBOLS FOR SOLENOID VALVES



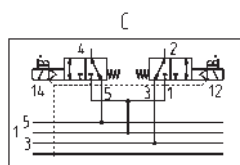
M = 5/2, Monostable



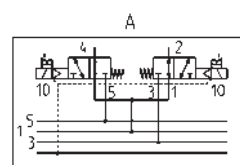
B = 5/2, Bistable



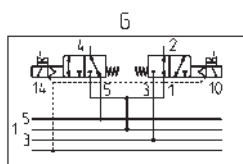
V = 5/3 Centres Closed



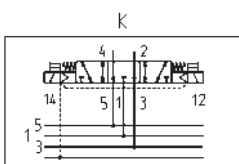
C = 2 x 3/2 NC



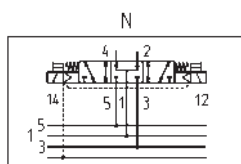
A = 2 x 3/2 NO



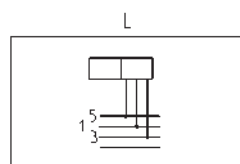
G = 1 x 3/2 NC +
1 x 3/2 NO



K = 5/3 CO



N = 5/3 CP



L = free position



Free valve position L

The supply includes:
1 fake valve
2 fixing screws



Mod.
D1EVC-L

INTERMEDIATE SUBBASES CODING EXAMPLE

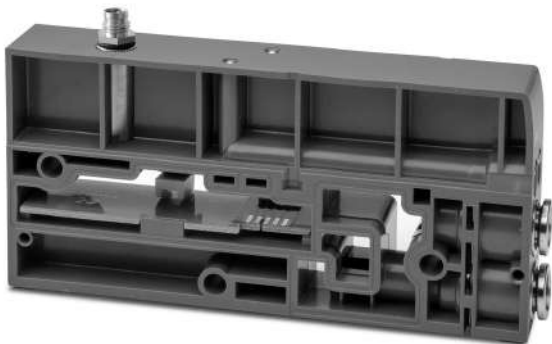
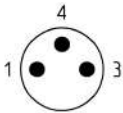
D	AM	1	S	-	QH	-	C	T
D	SERIES							
AM	ACCESSORIES AM = modular accessories							
1	SIZE: 1 = 10.5 mm							
S	COMPONENT: S = modular subbase							
QH	<p>INTERMEDIATE DIAPHRAGM SUBBASE</p> <p>Q = diaphragm on channels 1, 3, 5 R = diaphragm on channel 1 S = diaphragm on channels 3, 5</p> <p>DIAPHRAGM WITH EXTERNAL SERVO-PILOT SUPPLY</p> <p>QT = diaphragm on channels 1, 3, 5; 12/14 external RT = diaphragm on channels 1; 12/14 external ST = diaphragm on channels 3, 5; 12/14 external</p> <p>DIAPHRAGM WITH INTEGRATED SILENCER</p> <p>QH = diaphragm on channels 1, 3, 5 RH = diaphragm on channel 1 SH = diaphragm on channels 3, 5</p> <p>SUBBASE FOR ADDITIONAL FLOW</p> <p>X = supply (1) and exhausts (3,5) XH = supply (1) and exhausts (3,5) with integrated silencer</p> <p>INTERFACE SUBBASE FOR ADDITIONAL FLOW WITH EXTERNAL SERVO-PILOT SUPPLY</p> <p>XT = additional supply (1) and exhausts (3, 5)</p> <p>FOR ELECTRICAL SUPPLY</p> <p>k = separation of electrical supply</p>							
C	VERSION: T = without cartridge C = cartridge tube Ø8							
T	TIE RODS = without tie rods T = with tie rods							

MODULE K TO SEPARATE POWER SUPPLY

This module allows to interrupt and provide a separate power supply to the subsequent solenoid valves besides additional supply and exhaust.

You only need to connect the +24V to one of the three pins

- 1 = +24V
- 3 = +24V
- 4 = +24V

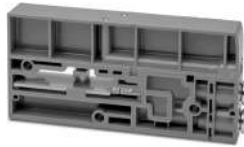


GENERAL DATA	
Connection	M8 3 pins
Dimensions	117 x 20 mm
Signalling	None
Supply	24 V DC (+/- 10%)
Protection class	IP 65
Temperature	0°C ÷ 50°C
Material	technopolymer
Weight	320 g

AVAILABLE FUNCTIONS – SUBBASE TYPES



R



Q



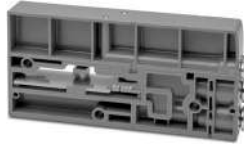
S



X



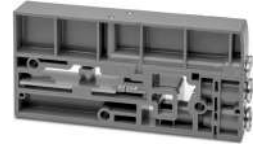
RT



QT



ST



XT



RH



QH



SH

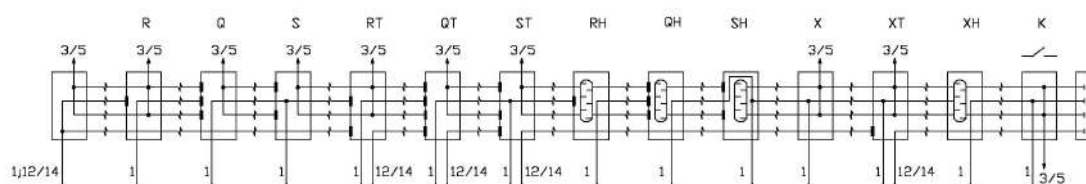


XH



K

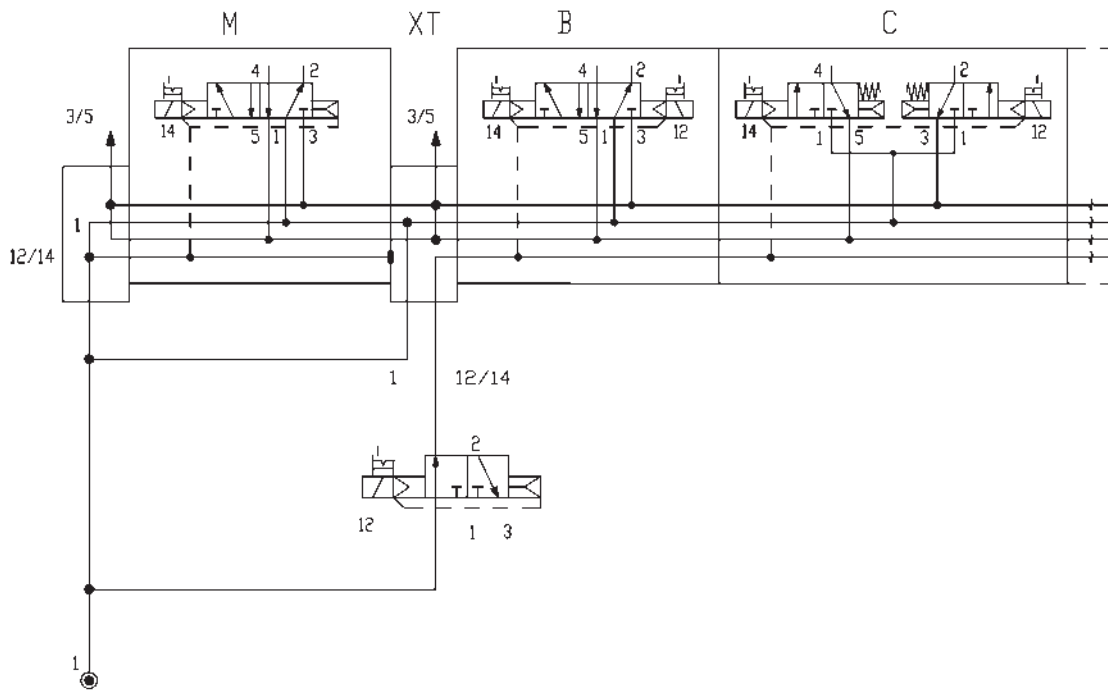
- R = diaphragm on channel 1
- Q = diaphragm on channels 1, 3, 5
- S = diaphragm on channels 3, 5
- X = additional supply channel 1 and exhaust channels 3, 5
- RT = diaphragm on channels with external supply 12/14
- QT = diaphragm on channels with external supply 12/14
- ST = diaphragm on channels with external supply 12/14
- XT = additional supply channel 1, 12/14 and exhausts channels 3, 5
- RH = diaphragm on channel 1 with integrated silencer
- QH = diaphragm on channels 1, 3, 5 with integrated silencer
- SH = diaphragm on channels 3, 5 with integrated silencer
- XH = additional supply channel 1 and exhaust channels 3, 5 with integrated silencer
- K = Separation of electrical supply



INTERMEDIATE SUBBASE FOR A SEPARATE SERVO-PILOT SUPPLY

In order for the solenoid valves to operate, they need an electric signal and pressure on channel 12/14. This intermediate subbase, available with different diaphragm functions on channels 1 and 3/5, always has channel 12/14 closed, the solenoid valves assembled on the subbases in subsequent positions cannot operate if there is no pressure. In the example below the solenoid valve type M is pneumatically supplied on all channels, solenoid valve B is installed next to subbase XT, which has channel 12/14 closed. The solenoid valve 3/2 which is not part of the island, is always activated under regular operating conditions (as indicated in the image) enabling all solenoid valves to operate properly. In case of any problems, by removing the actuation of this solenoid valve, it is possible to interrupt the functioning of the subsequent positions.

In this condition, the 2x3/2 valves assume the rest position.



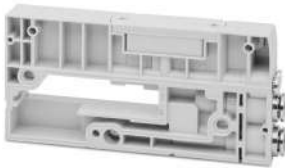
VALVE SUBBASES CODING EXAMPLE

D	AM	1	S	-	A	T
D	SERIES					
AM	ACCESSORIES AM = modular accessories					
1	SIZE 1 = 10,5 mm					
S	COMPONENT S = modular subbase					
A	TYPE OF CONNECTION T = subbase without cartridges			A = cartridges tube Ø 4		B = cartridges tube Ø 6
T	TIE RODS = without tie rods			T = with tie rods		



SUPPLY MODULE/SERVOPILOT CODING EXAMPLE

D	AM	1	0	-	KC
D	SERIES				
AM	ACCESSORIES AM = modular accessories				
1	SIZE 1 = 10,5 mm				
0	SERVO-PILOT SUPPLY 0 = internal / external				
KC	INITIAL PNEUMATIC TERMINAL PLATE KC = cartridge tube Ø8				



CODING EXAMPLE

D	AM	1	T	-	Q	0
D	SERIES					
AM	ACCESSORIES AM = modular accessories					
1	SIZE 1 = 10,5 mm					
T	COMPONENT T = electrical terminal plate					
Q	TYPE OF TERMINAL PLATE M = multipole 25 pins		Q = multipole 44 pins			
0	INTERFACE 0 = without interface		W = WLAN			



Pneumatic terminal plate

The supply includes:
1 terminal plate
3 fixing screws



Mod.
DAM10-RT

Connection interface between electrical section and valves

The supply includes:
1 terminal plate
3 fixing screws for valve section
2 fixing screws for serial section
1 interface



ME4-00D1-DI

Closing terminal of fieldbus electrical section

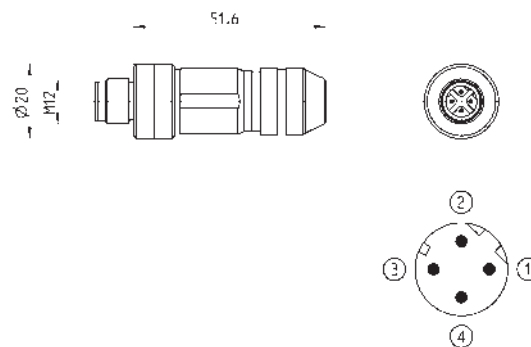
The supply includes:
1 terminal plate
2 fixing screws



CX4AP-L

Male wiring connector for Bus-IN and Bus-OUT

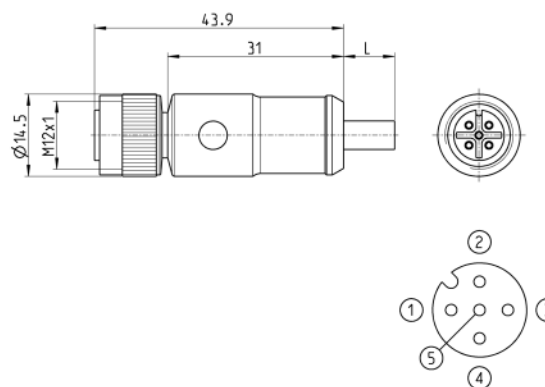
For PROFINET, EtherCAT, EtherNet/IP



Mod.	description	type of connector	connection	cable length (m)
CS-SM04H0	for metal wiring	straight	M12 D 4 pin	-

Cable with M12 5 pin connector, 90°, female, shielded

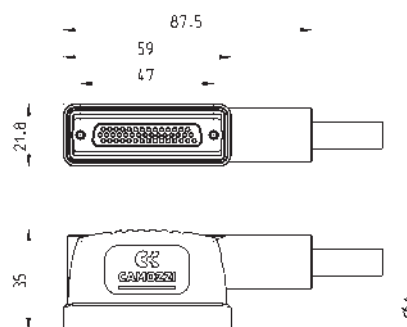
For IO-Link power supply and signal



Mod.	Cable length (m)
CS-LF05HB-D200	2
CS-LF05HB-D500	5

Right angle Sub-D female connector 25-44 pins

Protection class IP65



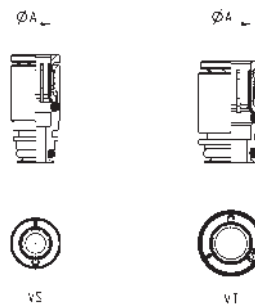
Mod.	gA	PIN	cable length (m)
G25X1-3	10	25	3
G25X1-5	10	25	5
G25X1-10	10	25	10
G25X1-15	10	25	15
G25X1-20	10	25	20
G25X1-25	10	25	25
G44X1-3	13	44	3
G44X1-5	13	44	5
G44X1-10	13	44	10
G44X1-15	13	44	15
G44X1-20	13	44	20
G44X1-25	13	44	25

Interchangeable cartridges for subbases and terminal plates/diaphragms



TABLE LEGEND:

✕ = compatible with
VS = subbase version
VT = terminal plate/diaphragm version



Mod.	A	VS	VT
6700 4-D1	4	✕	
6700 6-D1	6	✕	
6700 8-D1	8		✕

M8 and M12 connector cover caps



For digital and analog input/output modules and subnet



Mod.	A	B	C [Connection]
CS-DFTP	10	11	M8
CS-LFTP	13.5	13	M12

Identification plates



The packaging contains
45 identification plates 9x5mm

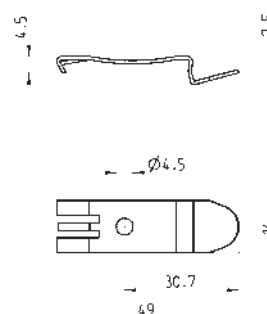
Mod.
HP1/E

Mounting brackets for DIN rail



DIN EN 50022 (mm 7,5 x 35 - width 1)

Supplied with:
2x plates
2x screws M4x8 UNI 5931



Mod.
PCF-D1