

# EB 80 ELECTRO-PNEUMATIC SYSTEM

EB 80 is defined as an electro-pneumatic system as it would be simplistic to use the term "solenoid valve island". In effect, a single assembly can combine solenoid valves of all types, multi-position bases, pneumatic and electric supplies arranged as desired in a system, digital or analogue input or output signal control modules and much more besides.

The EB 80 system is protected by numerous patents and utility models, which enhance the most innovative design solutions.

The possible combinations are endless, but the most amazing thing is that they can be obtained using a small number of basic components.

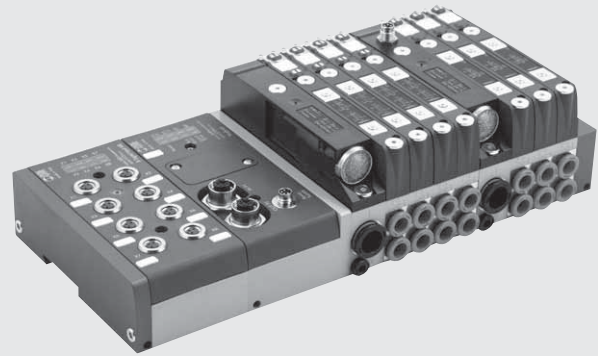
In order to achieve this objective, a single size of small yet high-performance valves to cover the vast majority of applications was conceived.

A single electronic control unit is provided when supplying 12VDC or 24VDC valves with multi-pole cables or with a field bus for each protocol.

All EB 80 versions come with an efficient diagnostic system.

The EB 80 catalogue consists of a first overall introductory chapter followed by a chapter for each subsystem.

NSF H1-certified grease is used to lubricate the valve spool and seals.



## TECHNICAL DATA

Supply voltage range	V	12 -10%	24 +30%				
Minimum operating voltage	V	10.8 *					
Maximum operating voltage	V	31.2					
Maximum admissible voltage	V	32 ***					
Power for each controlled pilot	W	3 for 15 ms, then holding 0.3					
Drive (for multi-pole)		PNP or NPN					
Solenoid rating		100% ED					
Solenoid valve supply power		See chapter "Electrical connection - E"					
Signal module supply power		See chapter "Signal module - S"					
Protection		Overload and short-circuit protected solenoid pilot Output					
Diagnostics		See chapter "Electrical connection - E"					
Maximum number of solenoid pilots		21 or 38 multi-pole connection; field bus 128					
Ambient temperature	°C	-10 to +50 (at 8 bar)					
	°F	14 to 122 (at 8 bar)					
Operating pressure		<b>5/2 and 5/3</b>	<b>2/2 and 3/2</b>				
Non-assisted valves	bar	3 to 8	3.5 to 8				
	MPa	0.3 to 0.8	0.35 to 0.8				
	psi	43 to 116	51 to 116				
Assisted valves	bar	Vacuum to 10					
	MPa	Vacuum to 1					
	psi	Vacuum to 145					
Servo pressure	bar	3 to 8	min. (see graph on page B2.51) / max. 8				
	MPa	0.3 to 0.8	min. (see graph on page B2.51) / max. 0.8				
	psi	43 to 116	min. (see graph on page B2.51) / max. 116				
Valve flow rate, at 6.3 bar ΔP 1 bar		<b>Ø 4 (5/32")</b>	<b>Ø 6</b>	<b>Ø 8 (5/16")</b>	<b>Ø 1/4"</b>	<b>Ø 10 **</b>	<b>Ø 3/8" **</b>
	valve 2/2 NI/min	350	430	500	430	-	-
	valve 3/2 NI/min	350	600	700	600	1250	1250
	valve 5/2 NI/min	350	650	800	650	1250 - 1400	1250 - 1400
	valve 5/3 NI/min	350	460	500	460	1000 - 1250	1000 - 1250
Actuation response time (TRA) / reset response time (TRR) at 6 bar							
	TRA/TRR valve 2/2 and 3/2	ms	14 / 28				
	TRA/TRR valves 5/2 monostable and shut-off valve	ms	12 / 45				
	TRA/TRR valve 5/2 bistable	ms	9 / 11				
	TRA/TRR valve 5/3	ms	15 / 45				
	TRA/TRR valve 3/2 high flow	ms	13 / 36				
Fluid		Unlubricated air					
Air quality required		ISO 8573-1 class 4-7-3					
Degree of protection		IP65 (with connectors connected or plugged if not used)					

\* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24

\*\* Using high-flow valves or connected valves - see pages B2.52

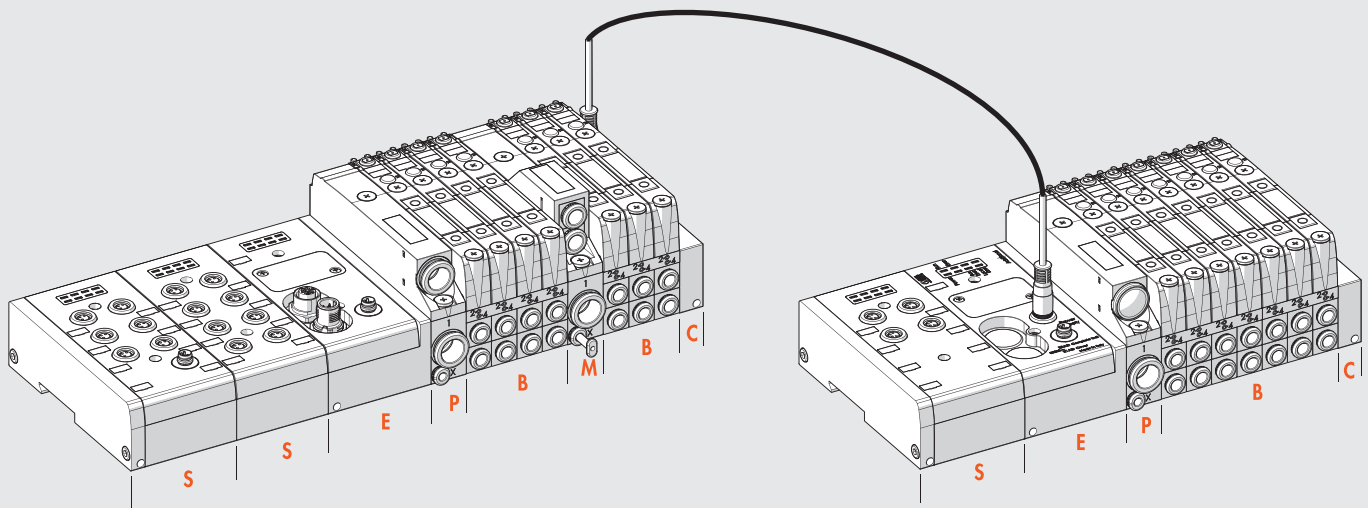
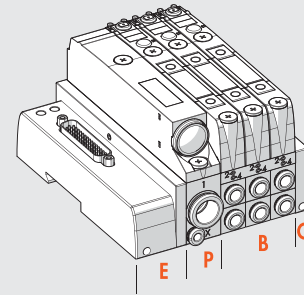
\*\*\* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

N.B.: Refer to the chapter of each EB 80 sub-assembly for specific technical data.

## COMPONENTS

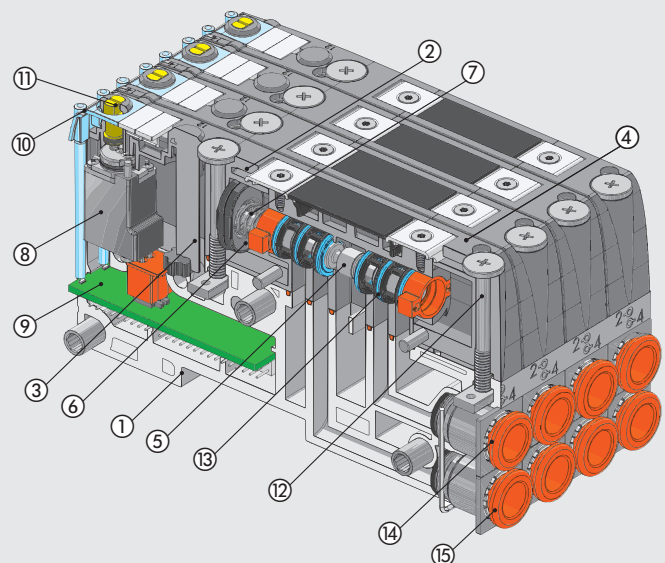
EB 80 systems are identified by a set of sub-assemblies:

- S** I/O Signal Modules
- E** Electrical connection
- P** Pneumatic supply
- B** Bases for solenoid valves; the valves are fixed on the bases
- M** InterMediate Modules
- C** Closed end-plate



## COMPONENTS – SOLENOID VALVE AND BASE

- ① BASE: technopolymer
- ② VALVE BODY: technopolymer
- ③ CONTROL: technopolymer
- ④ BASE: technopolymer
- ⑤ SPOOL: chemically nickel-plated aluminium
- ⑥ CONTROL PISTON: Stainless steel and NBR
- ⑦ SPRING: Oteva® steel and Dacromet treatment
- ⑧ SOLENOID VALVE
- ⑨ ELECTRONIC BOARD
- ⑩ LED light display: technopolymer
- ⑪ MANUAL CONTROL: nickel-plated brass
- ⑫ SCREW SECURING VALVE TO THE BASE: galvanised steel
- ⑬ SPOOL GASKET: NBR
- ⑭ Push-in fitting CARTRIDGE for port 2
- ⑮ Push-in fitting CARTRIDGE for port 4



THE EB 80 WORLD

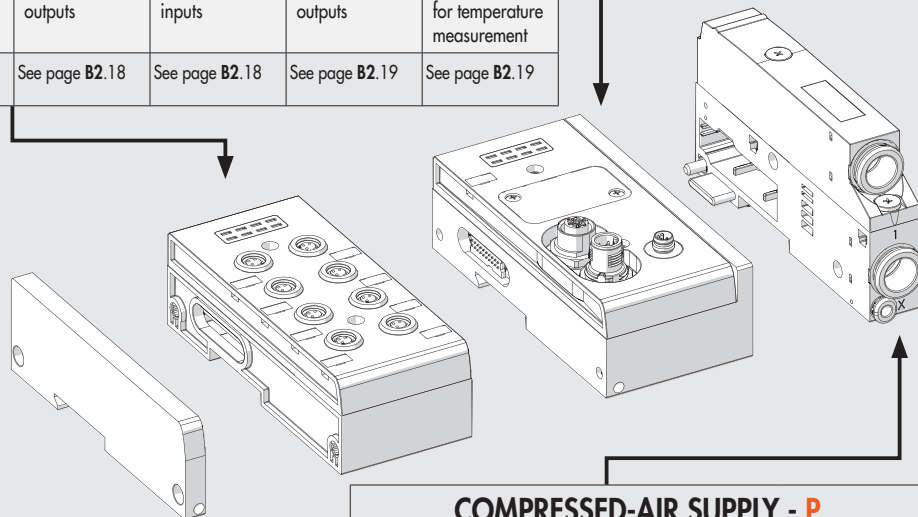
**ELECTRICAL CONNECTION - E**

E025	E044	E0EN	E0EC	E0PN	E0CN	E0PB	E0PL	E0IO	E0AD
EB 80 25-pin electrical connection	EB 80 44-pin electrical connection	EB 80 Electrical connection EtherNet/IP	EB 80 Electrical connection EtherCAT	EB 80 Electrical connection Profinet IO	EB 80 Electrical connection CANopen	EB 80 Electrical connection Profibus-DP	EB 80 Electrical connection Ethernet POWERLINK	EB 80 Electrical connection IO-Link	Additional electrical connection EB 80
See page B2.26	See page B2.26	See page B2.37	See page B2.37	See page B2.37	See page B2.37	See page B2.37	See page B2.37	See page B2.37	See page B2.42

**SIGNAL MODULE - S**

S01	S02	S03	S04	S05	S06	S07	S08
EB 80 module with 8 M8 digital inputs	EB 80 module with 8 M8 digital outputs	EB 80 module with 6 M8 digital outputs + electrical supply	EB 80 module with 4 M8 analogue inputs	EB 80 module with 4 M8 analogue outputs	EB 80 module with 16 digital terminal block inputs	EB 80 module with 16 digital terminal block outputs	EB 80 module with 4 M8 analogue inputs for temperature measurement
See page B2.16	See page B2.16	See page B2.17	See page B2.17	See page B2.18	See page B2.18	See page B2.19	See page B2.19

Part included in the **ELECTRICAL CONNECTION - E** with Fieldbus



**COMPRESSED-AIR SUPPLY - P**

P_Z00	P_Z__	P_Z60	P91Z90
Compressed air supply - Silenced relief	Compressed air supply - Conveyed relief	Compressed air supply - Separate reliefs	Module for electric version only
See page B2.45	See page B2.45	See page B2.45	See page B2.46

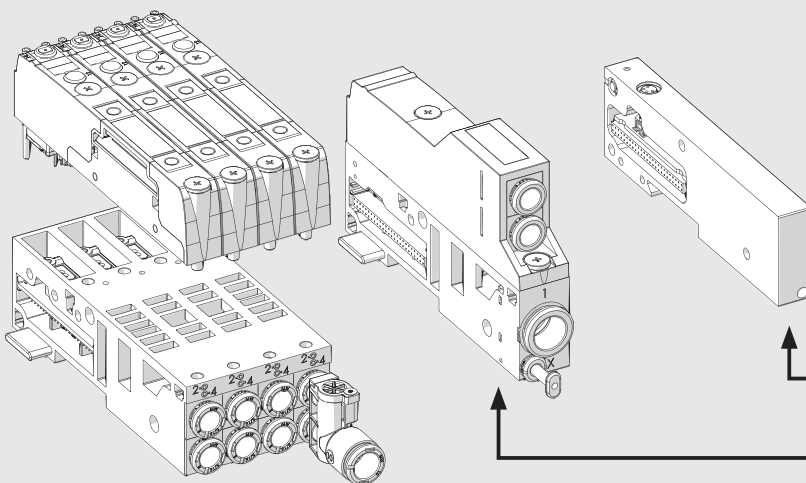
VALVES											
Z_	I_	W_	L_	V_	K_	O_	G_	J_	R_	NO	Y8
2 valves 2/2 NC	2 valves 3/2 NC (valid as 5/3 OC)	2 valves 3/2 NO (valid as 5/3 PC)	3/2 NC + 3/2 NO	monostable 5/2	bistable 5/2	5/3 CC	3/2 NC high flow	3/2 NO high flow	Shut-off valve	Dummy valve	Bypass
See page B2.51	See page B2.51	See page B2.51	See page B2.51	See page B2.51	See page B2.51	See page B2.51	See page B2.52	See page B2.52	See page B2.53	See page B2.54	See page B2.54

CLOSED END-PLATE - C		
C1	C2	C3
Closed end-plate for islands with multi-pole connector	Closed end-plate for islands with fieldbus	Closed end-plate for electrical connection of islands with fieldbus to additional islands
See page B2.62	See page B2.62	See page B2.62

INTERMEDIATE SUPPORT - M		
M_ Z0	M_ Z	M_ Z6
Intermediate module - Silenced relief	Intermediate module - Conveyed relief	Intermediate module - Separate relief
See page B2.57	See page B2.58	See page B2.59

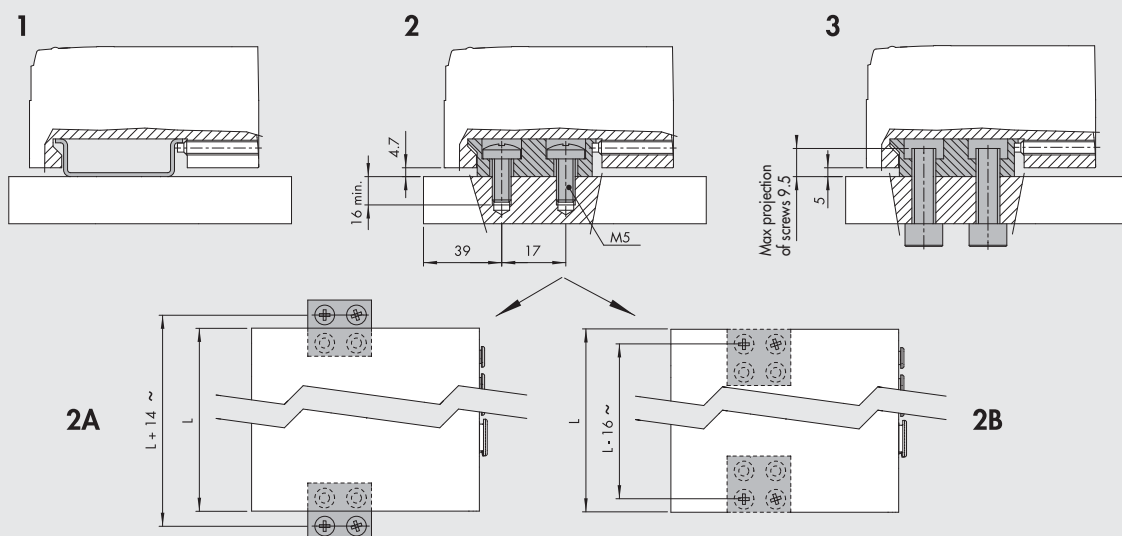
BASES FOR VALVES - B	
B3_ 0	B4_
3-position base for valves	4-position base for valves
See page B2.48	See page B2.48

Y-FITTING
R2
Y-fitting
See page B2.55



## FIXING OPTIONS

- 1 - **Fixing on a DIN bar:** tighten the grub screws into modules E (electrical connection) and C (closed end plate).  
For islands with more than 40 valves or 5 modules, also use the additional plate code 02282R4001.
  - 2 - **Fixing on a flat surface:** use the pair of brackets code 02282R4000 and the M5x20 screws supplied.  
You can choose where to position the brackets in relation to the island:
    - 2A - **Protruding brackets:** can be used to install the island + brackets unit from above. First secure the brackets to the modules E and C using the grub screws, then secure everything with M5x20 screws.
    - 2B - **Concealed brackets:** the overall dimensions of the island are reduced. First secure the brackets to the flat top with M5x20 screws, then place the island onto the brackets and lock the two grub screws provided in the modules E and C.
  - 3 - **Fixing through a wall:** use the brackets code 02282R4000. The brackets come with M6 threaded holes and can be fixed with M6 screws (not included in the supply) passing through the wall. The brackets can be fixed either protruded or concealed.
- N.B.:** Planar surfaces are required to ensure correct fixing. Avoid twisting or bending the valve units.



## LUBRICATION

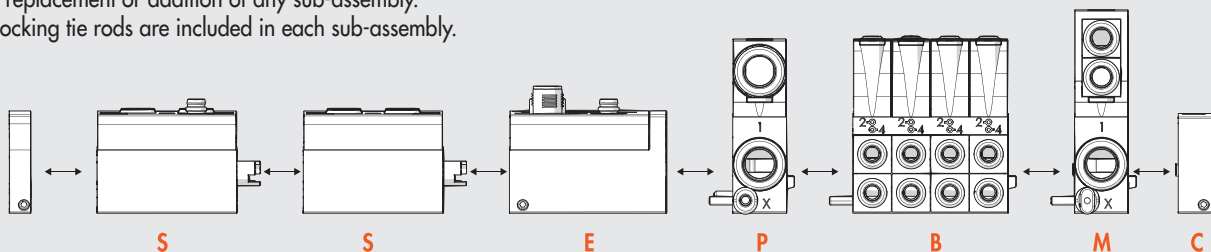


The EB 80 electro-pneumatic system is designed to run millions of cycles without the need for any lubrication. This is possible thanks to the optimisation of its components and the use of a special grease with excellent properties and NSF H1 certified. To avoid removing the grease, it is highly recommended not to lubricate the valve input and output ports and check the quality (to ISO 8573-1 class 4-7-3) of the compressed air used, which is often contaminated by particularly aggressive oils that are released by compressors and are not always compatible with the elastomers used in the valves.

## SOME CHARACTERISTICS OF EB 80 SYSTEMS

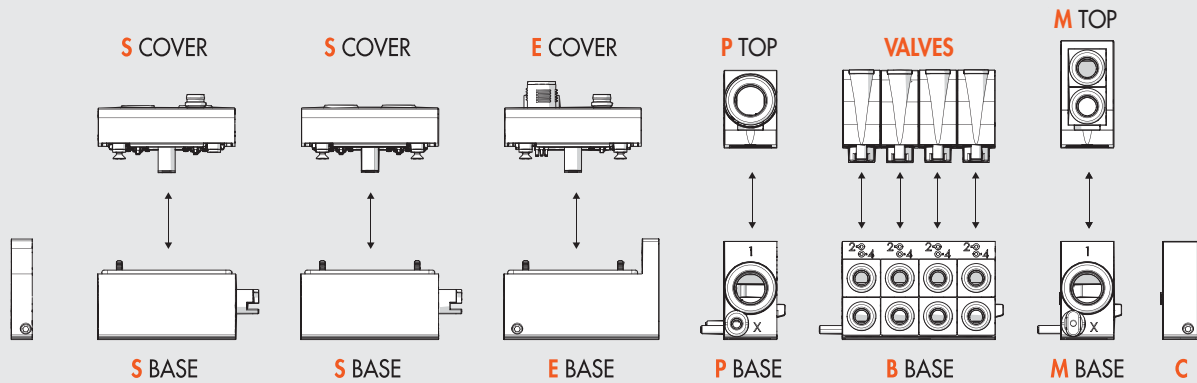
## HORIZONTAL MODULARITY

- Easy replacement or addition of any sub-assembly.  
The locking tie rods are included in each sub-assembly.



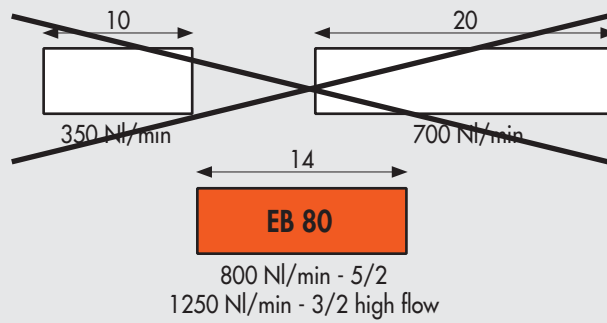
**VERTICAL MODULARITY**

- Easy replacement – no need to disassemble the pack – of the valves on the Bases – B and also of the top part (cover) of subsystems S, E, P, M using a single Phillips-head screwdriver.
- N.B.:** All protocols can be mounted on the base for field buses and all input or output modules can be mounted on the same base for signals.



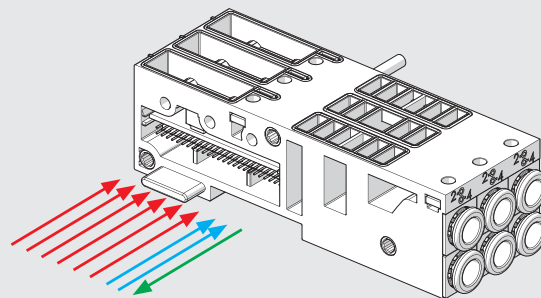
**ONE SIZE FITS ALL**

- Reduced dimensions
- High flow rate
- One warehouse and spares

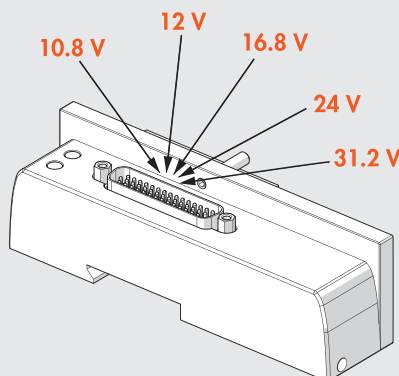


**THE SAME BASE FITS BOTH MULTI-POLE CONNECTIONS AND FIELD BUSES**

- Controls from multi-pole connection
- Controls from field buses
- Diagnostics

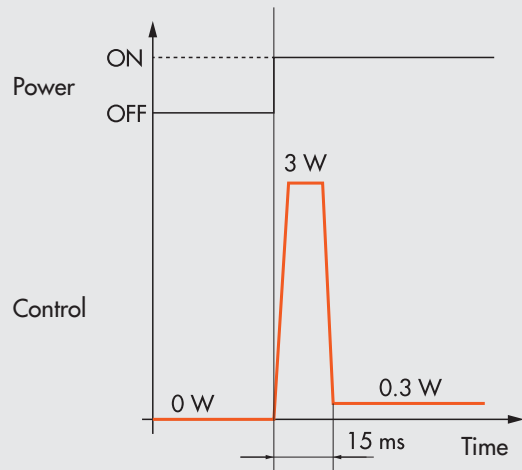


**THE SAME ISLAND CAN BE SUPPLIED 10.8 - 31.2 VDC**



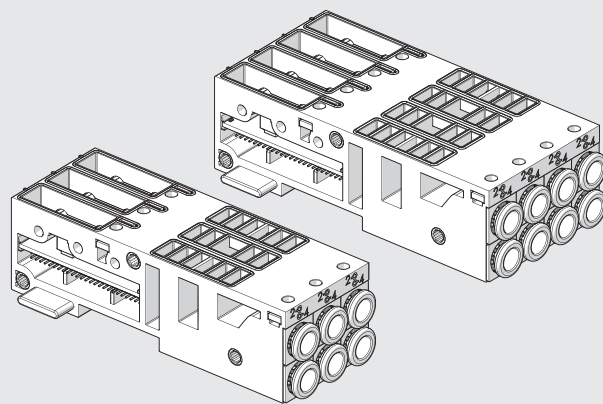
### ONLY 0.3 W FOR EACH SOLENOID VALVE

- Speed-up solenoid valve control:
  - high power for a few milliseconds ensures high performance and rapid and safe switching;
  - reduced holding power resulting in reduced temperatures and energy saving.



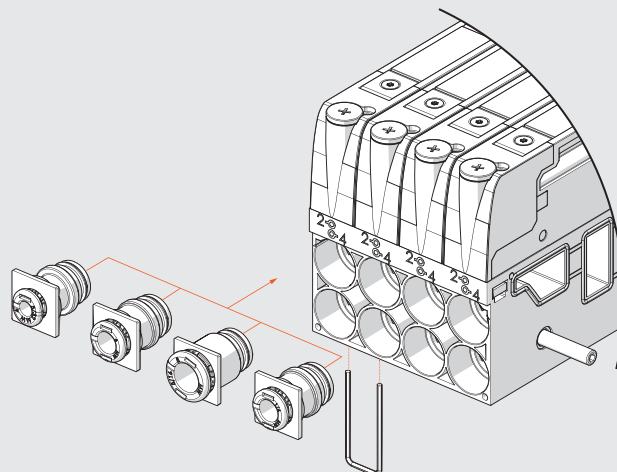
### 3- OR 4-POSITION BASES FOR VALVES

- Island layout options:
  - 3 1 base with 3 positions
  - 4 1 base with 4 positions
  - (5 2 bases with 3 positions and 1 dummy valve)
  - 6 2 bases with 3 positions
  - 7 1 base with 3 and 1 with 4 positions
  - 8 2 bases with 4 positions
  - ...
- Compared to single-base solutions, this configuration is advantageous because:
  - just a few bases are required for multiple positions;
  - the base is sturdy and rigid;
  - there is plenty of space to accommodate smart electronics



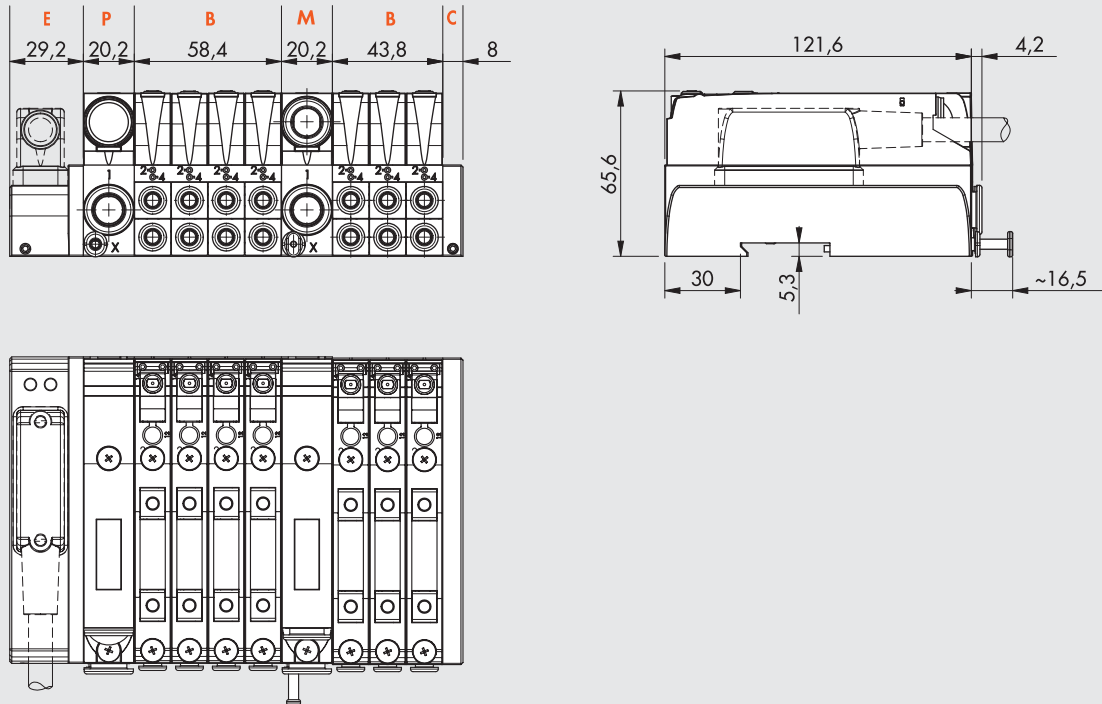
### INTERCHANGEABLE CARTRIDGE FITTINGS

- For pipes  $\varnothing$  4 (5/32"), 6, 8 (5/16"), 1/4"

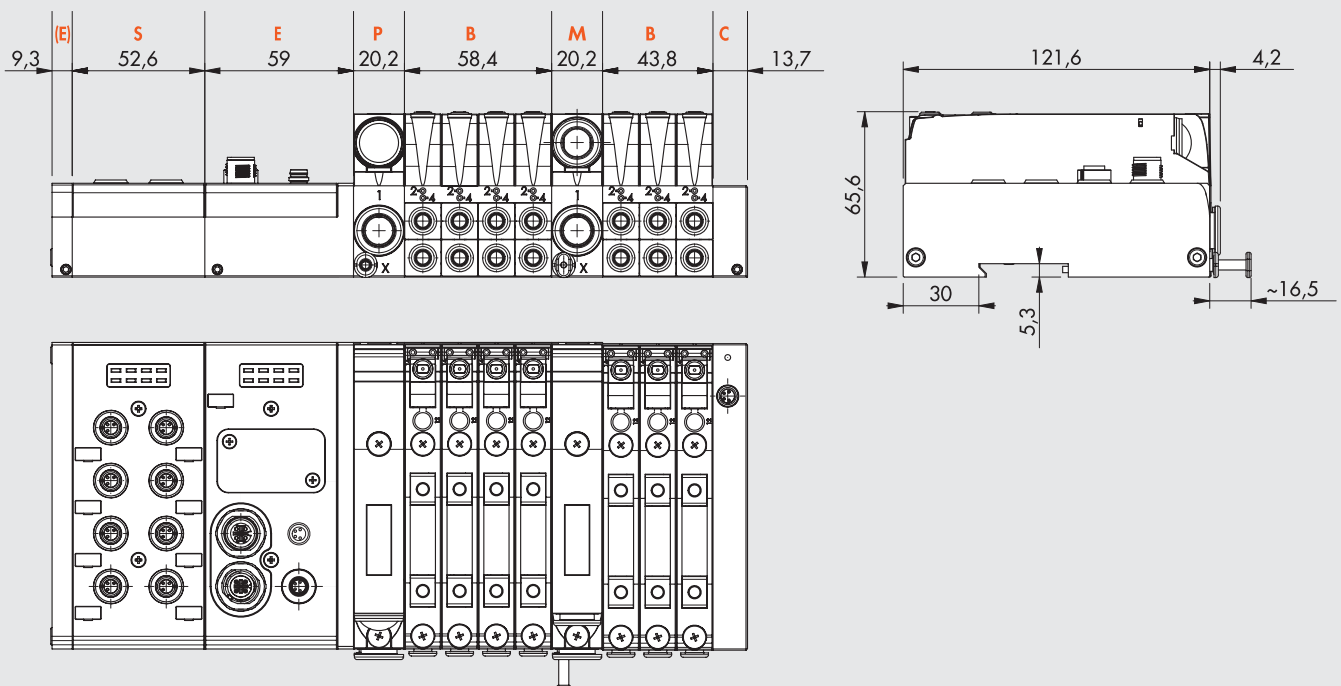


# DIMENSIONS

## DIMENSION OF VERSIONS WITH MULTI-POLE CONNECTION



## DIMENSION OF VERSIONS WITH FIELD BUS OR ADDITIONAL CONNECTION





## DESCRIPTION

A complete system has a compound **description** of all its subsystems listed in sequence from left to right, as shown below. The abbreviation of each subsystem is obtained by taking the code and omitting the first digits 02282. For example: the digital 8-input signal module is identified with code 02282S01; only write S01 in the description.

The abbreviation of each base for valves consists of:

Abbreviation of the Base	Manual valve control	Type of valves
Obtained from the code, after removing 02282	0 = monostable 1 = bistable	Valves Dummy valve Bypass
<b>Example</b> 4-position base, 8 solenoid pilots, Ø 6 pipe; code 02282B4086666	Monostable	2 monostable 5/2 valves - V 1 double 3/2 NO - W 1 dummy valve - F
<b>Abbreviation</b> B4086666	0	VVWF

The description is therefore a sequence of this type:

EB 80	- S _ _	- E _ _	- P _ _ _	- B _ _ _ _ _	- M _ _ _	- C _
EB 80 system	Signal module (if present)	Electrical connection	Compressed air supply	Base for valves (as many as there are) with normal or dummy	Intermediate (if present)	Closed end-plate
For the codes:	see page B2.20	see page B2.24	see page B2.46	see page B2.49 and B2.54	see page B2.60	see page B2.63

## Example:

EB 80-S01-E0EN-P3XZ00-B4086660VWKN-M300Z30-B30388800VVN-C2

EB 80	- S01	- E0EN	- P3XZ00	- B4086660VWKN	- M300Z30	- B30388800VVN	- C2
EB 80 system	Signal module complete 8 M8 digital inputs	Electrical connection EtherNet/IP	Compressed air supply - fitting Ø 12 - pilot servo Ø 4 - silenced relief	Base for valves - 4 positions - 8 controls - fittings for pipe Ø 6 - manual monostable control - 5/2 monostable valve - 2 3/2 NO valves - bistable 5/2 valve - dummy valve	Intermediate - fittings for pipe Ø 12 - through ports - without supplementary power supply	Base - 3 positions - 3 controls - fittings for pipe Ø 8 - manual monostable control - 5/2 monostable valve - 5/2 monostable valve - dummy valve	Closed end-plate for valve Island with field bus

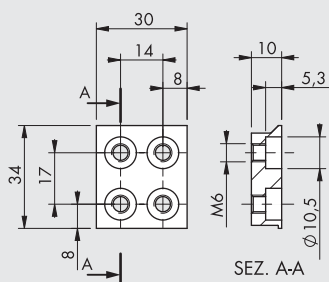
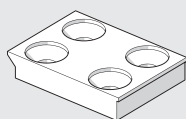
Endless number of EB 80 systems can be obtained and their description is variable in length, which can be very extended.

The actual ordering CODE of an EB 80 system is created by Metal Work S.p.a. with a limited number of characters.

The ordering code is not explicative. The description only is univocal, complete and explicative.

## ACCESSORIES

## FIXING BRACKET



Code	Description	Weight [g]
02282R4000	EB 80 base fixing bracket	47

Note: 2 pieces per pack complete with 4 M5x20 screws

## NOTES

Please refer to the subsystem chapter for other accessories (e.g. connectors) and spare parts.

## EB 80 INDUSTRY 4.0

The new advanced EB 80 diagnostic functions, known as EB 80 I4.0, provide a powerful analysis tool for traditional maintenance operations, ensuring the safe, reliable and lasting operation of production units.

They are available for all electrical connections with fieldbuses and bases marked I4.0, with advanced diagnostics integrated in accordance with Industry 4.0 philosophy.

These functions use the original EB 80 diagnostics, integrating them with the ability of the station itself to control IOs.

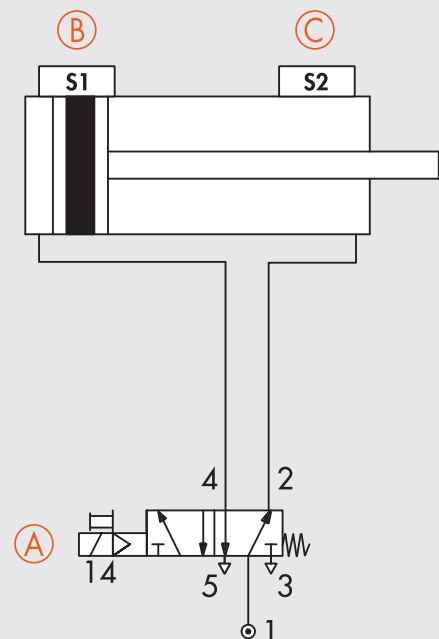
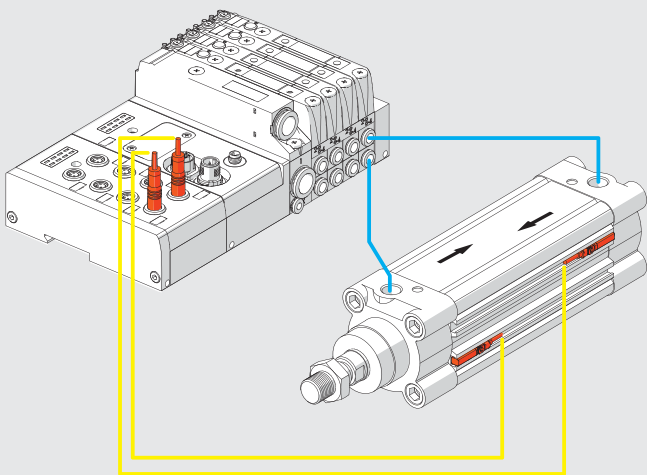
They re-organise and optimise maintenance management by developing predictive maintenance in order to:

- predict faults;
- intervene early to avoid system downtime;
- have all information on equipment operation available in real time;
- monitor component end-of-lifetime;
- optimise warehouse spare parts management.

This makes it possible to turn the data collected into concrete actions using standard EB 80 stations without needing additional modules.

### Description of EB 80 I4.0 functions:

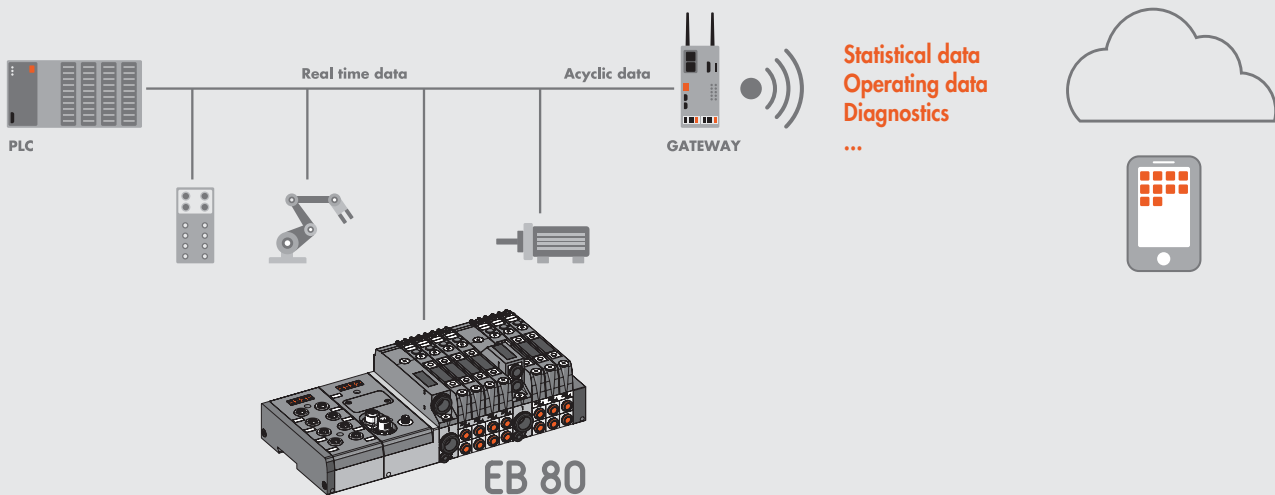
- System data:
  - EB 80 system startup counter;
  - supply alert counter.
- Valve data. Each valve base for each solenoid valve permanently stores the following information:
  - cycle counter;
  - counter for total solenoid valve excitation time;
  - activation of a flag to signal average lifetime exceeded;
  - short circuit alert counter;
  - open circuit alert counter.
- Electropneumatic system control functions (data updated with each cycle):
  - measurement of the delay between activating the solenoid valve "A" and actuator movement commencing via the signal of sensor "B", with delays that exceed the limit flagged;
  - measurement of actuator movement time using two linked sensors "B" and "C", with exceeded time limits flagged;
  - measurement of the delay between deactivating the solenoid valve "A" (or activating a second valve) and actuator return commencing via the signal of sensor "B", with exceeded time limits flagged;
  - measurement of actuator return time using two linked sensors "B" and "C", with exceeded time limits flagged;
  - counter for actuator range of motion.



Electrical connection modules can be used to complement the EB 80 with the main field buses available in the market. In this way, the control system (generally a PLC) can handle in real time the behaviour of the solenoid valve island, including signal modules.

With the introduction of the I4.0 version, the field bus connection modules also send to the network the historical and diagnostic data relating to the behaviour of the island (such as the number of cycles for each solenoid pilot, total activation time and alarms) and the controlled pneumatic circuit (such as the delay times in sensor switching and actuator activation times).

This data is also sent to the control system and can be handled differently depending on the situation: in some cases, it can be used in real time, like in the case of fault alarms; in other cases, it can be sent to a storage local unit or one remotely controlled on a cloud server, and is analysed in a subsequent stage; in other cases, the alarms can be sent to a teleservice station that can monitor the state of the system remotely.



# EB 80 SIGNAL MODULES - S



The EB 80 systems come with numerous input or output signal modules, which can be mounted on systems with fieldbus electrical connection or additional systems.

The signal modules can be added at any time. You only need to unscrew the aluminium plate to the left side of the "Electrical connection - E" module and install the "Signal Modules - S" (ready fitted with fixing tie rods) and retighten the end plate to the left.

Each signal module consists of two parts: the lower part, which contains transmission electronics of the controls, is unique and valid for all modules; the upper part, which is specific for each type.

This design highlights the modular features of the EB 80 system: the upper part of the "Signal Module - S" can be replaced either with a similar one by simply unscrewing the screws in the event of failure or one of another type. All this without having to remove anything from the system.



TECHNICAL DATA		
Supply voltage range	V	12 -10% 24 +30%
Minimum operating voltage	V	10.8 *
Maximum operating voltage	V	31.2
Maximum admissible voltage	V	32 ***
Power and current		see individual "Signal Modules - S"
Protection		Overload and polarity inversion protection
Diagnostics		Local via LED light and software message
Maximum number of signal modules		Undervoltage, overvoltage, short-circuit and overload of individual connector and the entire module, 16 digital inputs modules 8 M8 + 16 digital outputs modules 8 M8 (or 8 modules with 16 Inputs + 8 modules with 16 Outputs) ** + 4 analogue inputs modules + 4 analogue outputs modules + 4 analogue input modules for temperature measurement
Ambient temperature	°C	-10 to + 50
	°F	14 to 122
Versions		digital input, digital output, analogue input, analogue output
Degree of protection		IP65 (with connectors connected or plugged if not used) IP40 for 16-position I/O modules

\* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24

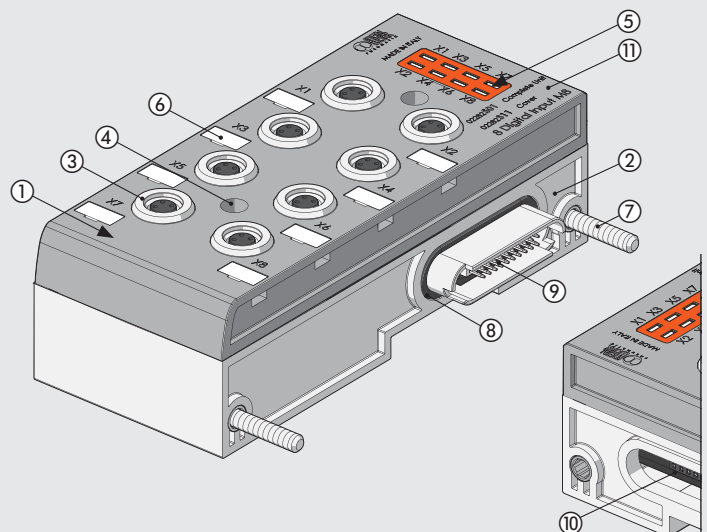
\*\* For 16-IN/OUT modules, powered via the fieldbus. Check that the total current of simultaneously connected Inputs and Outputs is not greater than 3.5 A.

\*\*\* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

N.B.: Refer to the following pages for specific technical data of each module.

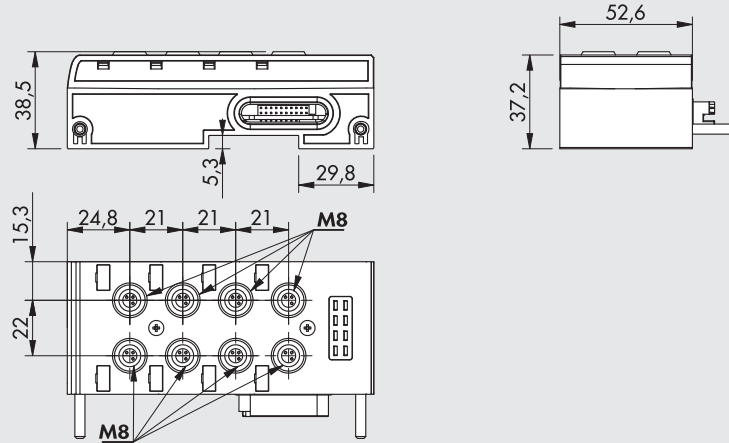
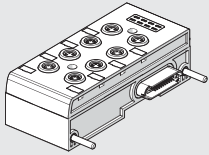
## COMPONENTS

- ① UPPER PART BODY: technopolymer
- ② LOWER PART BODY: technopolymer
- ③ M8 CONNECTOR: signal connection
- ④ SCREW securing the upper part to the lower part
- ⑤ LED light
- ⑥ NAMEPLATE: removable
- ⑦ TIE ROD to secure modules: galvanized brass and steel
- ⑧ GASKET: NBR
- ⑨ MALE CONNECTOR for other modules - S or fieldbus connection - E
- ⑩ FEMALE CONNECTOR for other modules - S or fieldbus connection - E
- ⑪ IDENTIFICATION of wording with laser



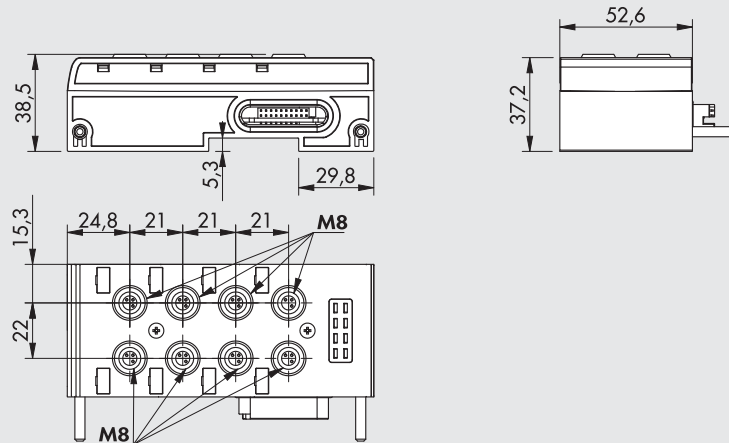
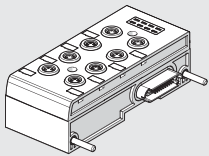
## DIMENSIONS - ORDERING CODES

### 8 M8 DIGITAL INPUTS



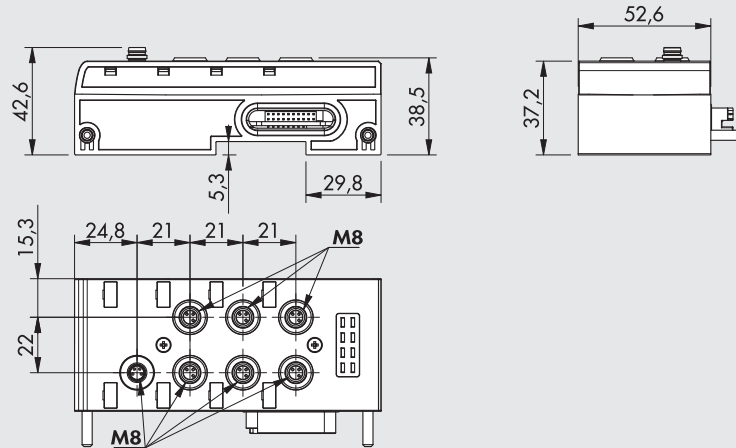
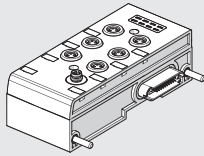
Code	Description	Weight [g]	TECHNICAL DATA	
02282501	EB 80 module with 8 M8 digital inputs	240	Sensors supply voltage	Corresponding to the supply voltage
			Current for each connector	max 200 mA
			Current for each module	max 500 mA
			Input impedance	3.9 kΩ
			Type of input	Software-configurable PNP/NPN
			Protection	Overload and short-circuit protected inputs
			Connections	8 M8 3-pole female connectors
			Input active signals	One LED for each input

### 8 M8 DIGITAL OUTPUTS



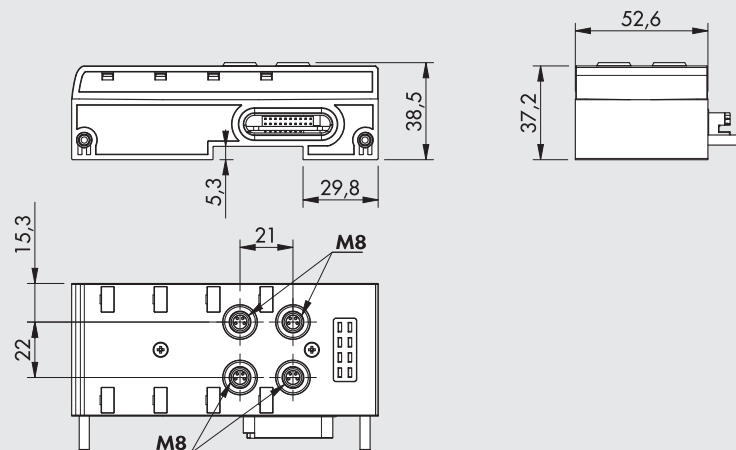
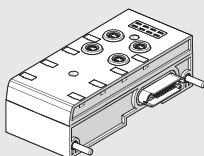
Code	Description	Weight [g]	TECHNICAL DATA	
02282502	EB 80 module with 8 M8 digital outputs	240	Output voltage	Corresponding to the supply voltage
			Current for each connector	max 500 mA
			Current for each module	max 3000 mA
			Type of output	Software-configurable PNP/NPN
			Protection	Overload and short-circuit protected inputs
			Connections	8 M8 3-pole female connectors
			Outputs active signals	One LED for each output

### 6 M8 DIGITAL OUTPUTS + ELECTRICAL POWER SUPPLY



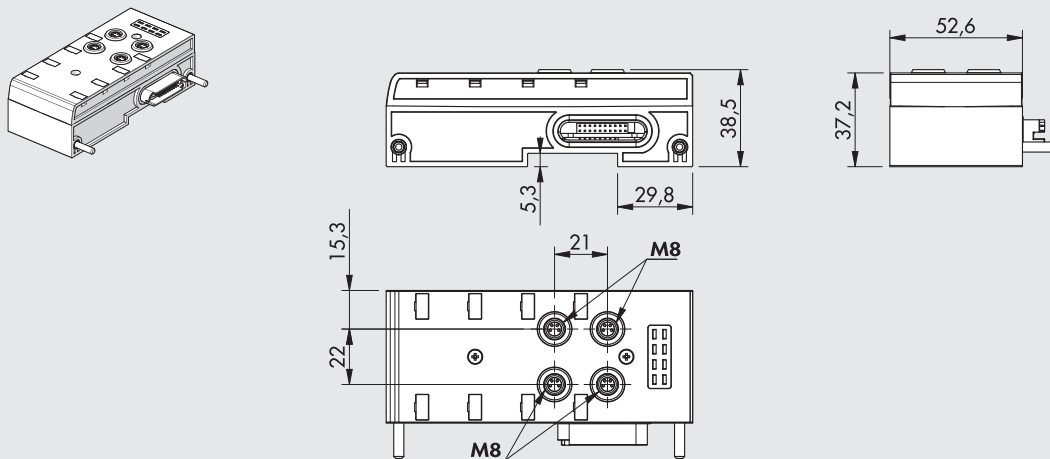
Code	Description	Weight [g]	TECHNICAL DATA	
02282503	EB 80 module with 6 M8 digital outputs + electrical supply	248	Supply voltage range	V 12 -10% 24 +30%
			Minimum operating voltage	V 10.8 *
			Maximum operating voltage	V 31.2
			Maximum admissible voltage	V 32 ***
			Output voltage	Corresponding to the supply voltage
			Current for each connector	mA max 1000
			Current for each module	mA max 4000
			Type of output	Software-configurable PNP/NPN
			Protection	Overload and short-circuit protected inputs
			Connections	6 M8 3-pole female connectors for Signals 1 M8 4-pole male connector for Supply
			Input active signals	One LED for each input
			* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24	
			*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.	

### 4 M8 ANALOGUE INPUTS



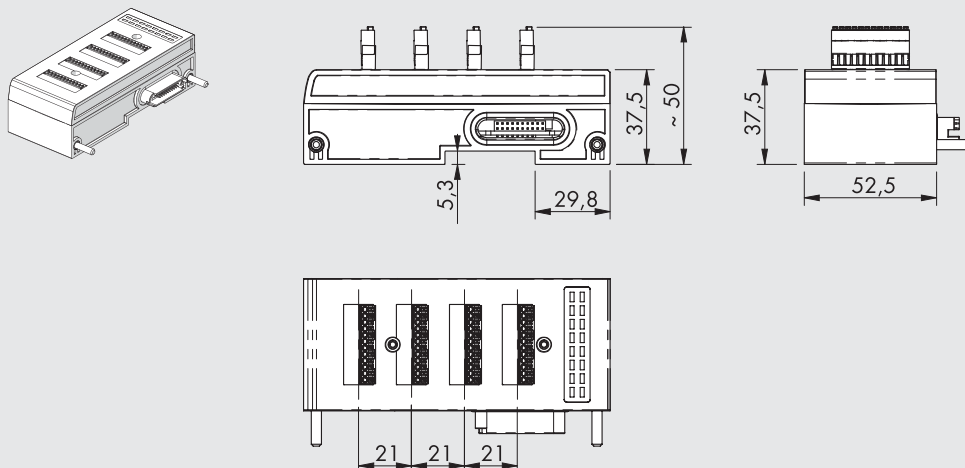
Code	Description	Weight [g]	TECHNICAL DATA	
02282504	EB 80 module with 4 M8 analogue inputs	223	Sensors supply voltage	Corresponding to the supply voltage
			Current for each connector	mA max 200
			Current for each module	mA max 650
			Type of input, software configurable	0/10 V; 0/5 V; +/-10 V; +/-5 V; 4/20 mA; 0/20 mA
			Protection	Overload and short-circuit protected inputs
			Connections	4 M8 4-pin female connectors
			Local diagnostic signal via LED	Overload, short-circuit or type of input not complying with the configuration
			Digital convert resolution	15 bit + prefix

**4 M8 ANALOGUE OUTPUTS**



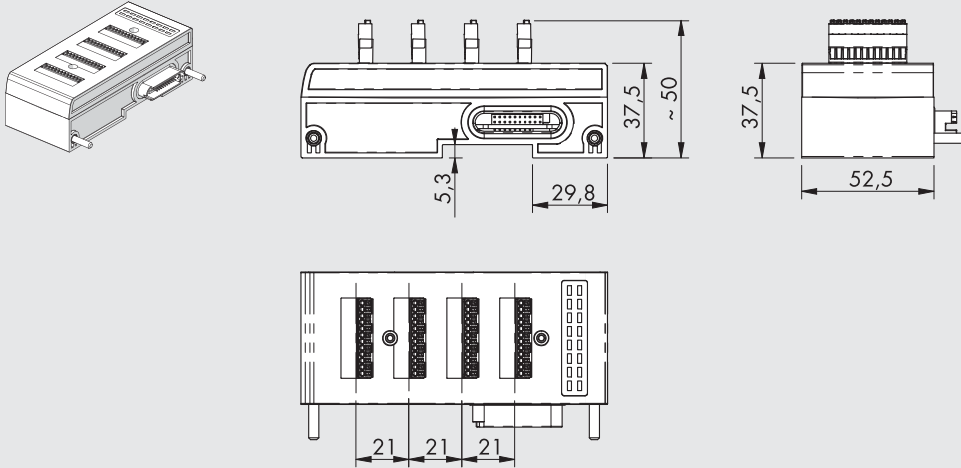
Code	Description	Weight [g]	TECHNICAL DATA	
02282S05	EB 80 module with 4 M8 analogue outputs	223	Devices supply voltage	Corresponding to the supply voltage
			Current for each connector	max 200 mA
			Current for each module	max 650 mA
			Type of output	0/10 V; 0/5 V; +/-10 V; +/-5 V; 4/20 mA; 0/20 mA
			Protection	Overload and short-circuit protected outputs
			Connections	4 M8 4-pole female connectors
			Local diagnostic signal via LED	Overload, short-circuit or type of connection not complying with the configuration
			Digital convert resolution	15 bit + prefix

**16 DIGITAL TERMINAL BLOCK INPUTS**



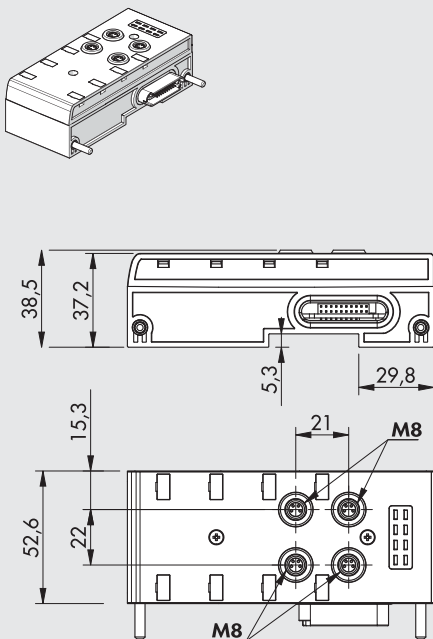
Code	Description	Weight [g]	TECHNICAL DATA	
02282S06	EB 80 module with 16 digital terminal block inputs	240	Sensors supply voltage	Corresponding to the supply voltage
			Current for each connector	max 200 mA
			Current for each module	max 500 mA
			Input impedance	3.9 kΩ
			Type of input	Software-configurable PNP/NPN
			Protection	Overload and short-circuit protected inputs
			Connections	4 12-pin connectors with spring clamping
			Input active signals	One LED for each input
			Degree of protection	IP40

## 16 DIGITAL TERMINAL BLOCK OUTPUTS



Code	Description	Weight [g]	TECHNICAL DATA	
02282S07	EB 80 module with 16 digital terminal block outputs	240	Output voltage	Corresponding to the supply voltage
			Current for each connector	max 500 mA
			Current for each module	max 3000 *
			Type of output	Software-configurable PNP/NPN
			Protection	Overload and short-circuit protected outputs
			Connections	4 12-pin connectors with spring clamping
			Outputs active signals	One LED for each Output
			Degree of protection	IP40
<p><b>* IMPORTANT: the module is powered via the fieldbus. Check that the total current of connected outputs is not greater than 3.5A.</b></p>				

## 4 M8 ANALOGUE INPUTS FOR TEMPERATURE MEASUREMENT



Code	Description	Weight [g]	TECHNICAL DATA	
02282S08	EB 80 module with 4 M8 analogue inputs for temperature measurement	223	Sensors supply voltage	Corresponding to the supply voltage
			Maximum input voltage	VDC 30
			Sensor type (RTD)	Pt100, Pt200, Pt500, Pt1000 (TK = 0.00385 and TK = 0.00391) Ni100, Ni120, Ni500, Ni1000 (TK = 0.00618)
			Connections type (RTD)	2, 3 or 4-wire
			Type of thermocouple (TC)	J, E, T, K, N, S, B, R
			Cold junction compensation for thermocouples	internal
			external (recommended in case of sudden changes in the ambient temperature)	With internal electronic sensor included PT1000 sensor for connection with the M8 thermocouple connector
			Temperature range	°C - 200 to + 800 °F - 328 to + 1472
			Digital convert resolution	15 bit + prefix
			Max error compared to ambient temperature	±0.5% (TC) ±0.06% (RTD)
			Max. basic error (ambient T 25°C)	±0.4% (TC) °C ±0.6 (with 4-wire RTD with 0.1 resolution) °C ±0.2 (with 4-wire RTD with 0.01 resolution)
			Repeatability (ambient T 25°C)	±0.03%
			Address employment	2 bytes for each input - 8 bytes per module
			Cycle time (module)	ms 240
			Software linearization	for RTD Piecewise linear approximation for TC NIST (National Institute of Standards and Technology)
			Maximum length of shielded cable for the connection	m Linearization based on ITS-90 scale (International Temperature Scale of 1990) for the thermocouple linearization < 30
			Diagnostics	One LED for each input and reporting to the Master



**KEY TO CODES**

02282	S	0	1
FAMILY	SUBSYSTEM	SUPPLY	TYPE
02282 EB 80	S Signals	0 Complete	1 8 M8 digital inputs 2 8 M8 digital outputs 3 6 M8 digital outputs + electrical supply 4 4 M8 analogue inputs 5 4 M8 analogue outputs 6 16 digital terminal block inputs 7 16 digital terminal block outputs 8 4 M8 analogue inputs for temperature measurement

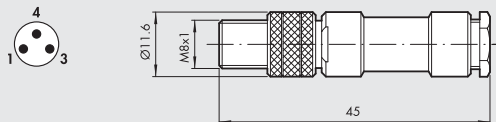
**ACCESSORIES**

**M8 PLUG**



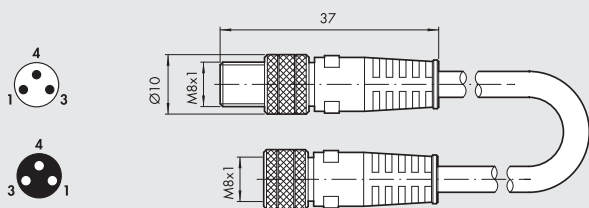
Code	Description
0240009039	Plug for M8 connector

**M8 CONNECTOR FOR DIGITAL INPUTS / OUTPUTS**



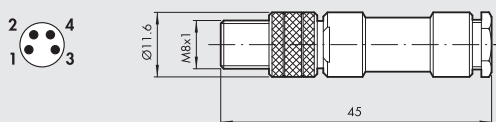
Code	Description
0240009010	M8 3-pin straight connector

**M8 CONNECTOR WITH CABLE FOR DIGITAL INPUTS /OUTPUTS**



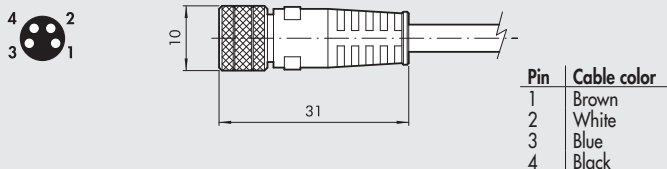
Code	Description
0240009009	M8-M8 3-pin straight connector with cable L = 3 m

**M8 MALE CONNECTOR FOR ANALOGUE INPUTS/OUTPUTS**



Code	Description
0240010300	M8 4-pin male connector

**M8 CONNECTOR FOR POWER SUPPLY**

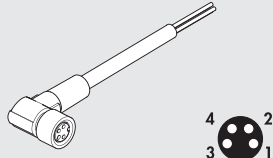


Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 3 m
0240009037	M8 4-pin female connector for power supply, cable L = 5 m
0240009058	M8 4-pin female connector for power supply, cable L = 10 m
0240009059	M8 4-pin female connector for power supply, cable L = 15 m

**90° M8 CONNECTORS**

Code	Description
0240009102	M8 4-pin connector - female, 90° angle L = 2 m
0240009103	M8 4-pin connector - female, 90° angle L = 5 m

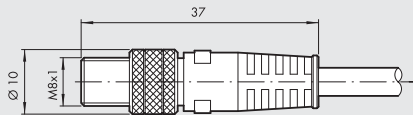
Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



**M8 4-POLE MALE CONNECTOR**

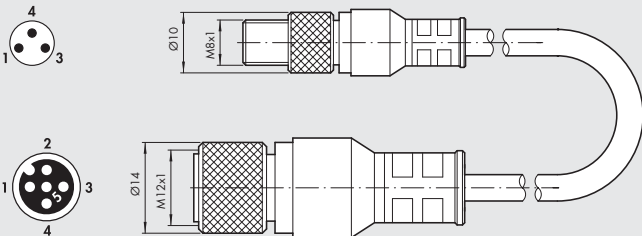
Code	Description
0240010105	M8 4-pin connector shielded cable L = 5 m

Pin	Colore cavo
1	Marrone
2	Bianco
3	Blu
4	Nero



**M8 3-POLE MALE – M12 5-POLE FEMALE CONNECTOR WITH CABLE FOR DIGITAL INPUTS/OUTPUTS**

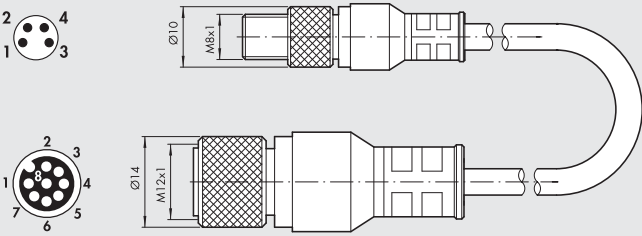
Code	Description
0240009045	M8 3-pole male straight - M12 5-pole female connector with cable L= 0.2 m



M8	M12
pin 1	pin 1
pin 2	pin 2
pin 3	pin 3

**M8 4-POLE MALE – M12 8-POLE FEMALE CONNECTOR WITH CABLE FOR REGTRONIC CONNECTION**

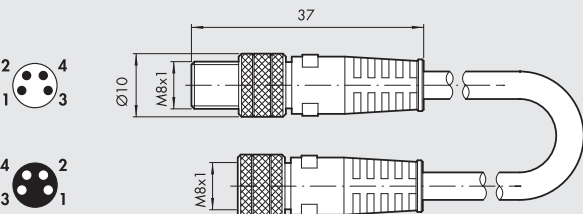
Code	Description
0240009046	M8 4-pole male straight - M12 8-pole female connector with cable L= 1 m



M8	M12
pin 1	pin 8
pin 2	pin 3
pin 3	pin 7
pin 4	disconnect

**M8 CONNECTOR WITH SHIELDED CABLE FOR ANALOGUE INPUTS/OUTPUTS**

Code	Description
0240005005	M8-M, M8-F 4-pole straight connector with shielded cable L = 1 m
0240005006	M8-M, M8-F 4-pole straight connector with shielded cable L = 3 m
0240005003	M8-M, M8-F 4-pole straight connector with shielded cable L = 5 m
0240005008	M8-M, M8-F 4-pole straight connector with shielded cable L = 10 m





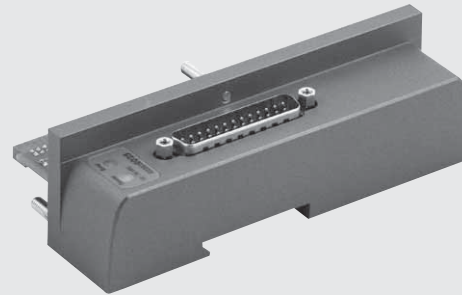
# EB 80 ELECTRICAL CONNECTION - E



The job of the "Electrical Connection - E" subsystem is to power the EB 80 systems, transmit control signals for the solenoid valves, send and receive signals for the input/output management modules and control diagnostics. Versions with a multi-pole connector or fieldbus are also available. It is worth noting that the island of solenoid valves functions equally with both systems. This means that all the valves, bases and intermediate elements can work both with parallel and serial controls (patented). Smart electronics of all electrical connection modules, including multi-pole ones, can be used to control unexpected functions, including very interesting diagnostics.

The system can be supplied with a very wide voltage range, so much so that the EB 80 island can be controlled either at 12VDC or 24VDC (patented). Overvoltages up to 30% of the rated value, i.e. up to 31.2V, are admitted. The minimum voltage for solenoid pilots can be 10.8V, i.e. 12V-10%.

The body of the multi-pole version is made of metal in one piece. Versions with a fieldbus instead consist of two parts: a lower part, with a single metal body separate from the bus protocol; an upper part with a technopolymer body dedicated to each specific bus protocol.



DISTRIBUTORS

EB 80 - ELECTRICAL CONNECTION - E

TECHNICAL DATA					
Supply voltage range	V	12 -10%	24 +30%		
Minimum operating voltage	V	10.8 *			
Maximum operating voltage	V	31.2			
Maximum admissible voltage	V	32 ***			
Drive (for multi-pole)		PNP or NPN			
Solenoid rating		100% ED			
Power supply without controlled valves:					
steady rate, with multi-pole connection	W	0.1 for "Electrical connection - E" + 0.25 for each "Base - B"			
steady rate, with fieldbus connection	W	4 for "Electrical connection - E" + 0.25 for each "Base - B"			
Signal module supply power		See chapter "Signal module - S"			
Maximum operating power supply (data useful for the sizing of the power supply unit)	W	3.15 for each solenoid pilot operated simultaneously + input and output			
Maximum current admissible					
with multi-pole connection	A	6 continuous, 9 instantaneous			
with fieldbus connection	A	4 continuous, 6 instantaneous for valve supply 4 continuous, 6 instantaneous for bus and signal supply			
Protection		Overload and short-circuit protected solenoid pilot Output			
Diagnostics		LED signal on valve, LED light on electrical connection. With multi-pole: fault signal OUT activation. With field bus: software message.			
Faults signalled		Short-circuited solenoid pilot; Solenoid pilot broken or missing Power supply out of range (under-voltage or over-voltage) With fieldbus only, different configuration, on switching on, compared to that stored; communication control between modules			
Ambient temperature	°C	-10 to + 50			
	°F	14 to 122			
Versions		Plug connectors, fieldbus with various protocols, additional island			
Maximum number of controllable solenoid pilots		25-pin connector	44-pin connector	Fieldbus	additional island
Maximum number of controllable solenoid valves		21	38	128	128
Degree of protection		Ditto as above, depending on the number of solenoid pilots and type of base			
Weight	g	IP65 (with connectors connected or plugged if not used)			
		180	180	350	320

\* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24

\*\*\* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.



# EB 80 MULTI-POLE ELECTRICAL CONNECTION - E

The job of the multi-pole version of the electrical connection subsystem is to power the EB solenoid valve islands. The system accepts to be supplied with a very wide range of voltages, to such an extent that the EB 80 island alone can be controlled at either 12VDC or 24VDC (patented). Overvoltages up to 30% of the rated value, i.e. up to 31.2V, are admitted. The minimum voltage for the solenoid pilots can be 10.8 V, i.e. 12 V - 10%. The body of the multi-pole version is made of metal in a single piece.



TECHNICAL DATA			
Supply voltage range	V	12 -10%	24 +30%
Minimum operating voltage	V	10.8 *	
Maximum operating voltage	V	31.2	
Maximum admissible voltage	V	32 ***	
Drive		Configurable PNP or NPN	
Power supply without controlled valves	W	0.1 for "Electrical connection - E" + 0.25 for each "Base - B"	
Solenoid pilot power on start-up (Speed Up)	W	3 for 15 msec	
Solenoid pilot power after start-up (holding)	W	0.3	
Maximum admissible current	A	6 continuous, 9 instantaneous	
Protection		System protected against overload short-circuit protected solenoid pilot Output	
Diagnostics		FAULT signal red light and Out signal on "Electrical connection - E" LED light signal on valve	
Faults signalled		Short-circuited solenoid pilot; Solenoid pilot broken or missing Power supply out of range (under-voltage or over-voltage)	
Ambient temperature	°C	-10 to + 50	
	°F	14 to 122	
Electrical connection		Plug connectors	
		25-pin connector	44-pin connector
Maximum number of controllable solenoid pilots **		21	38
Maximum number of controllable solenoid valves		Ditto as above, depending on the number of solenoid pilots and type of base	
Maximum number of simultaneously controllable solenoid pilots:			
at 24VDC		21	38
at 12VDC		Depending on the voltage drop – see page B2.24	
Maximum current at 24VDC	A	3	5
Maximum current at 12VDC	A	6	9
Degree of protection		IP65 (with connectors connected or plugged if not used)	
Weight	g	180	180

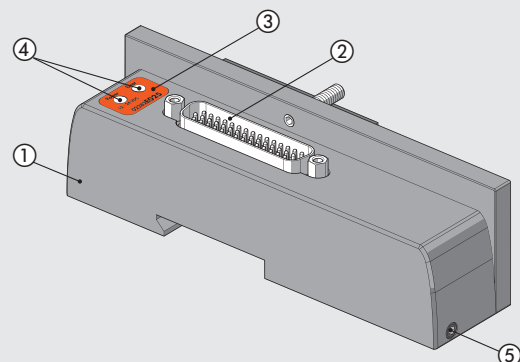
\* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24

\*\* If the units are made up of bases exceeding the maximum number of controllable solenoid pilots (by mounting a dummy valve N or a bypass Y in the excess positions), operation is only possible on the islands with a positive signal (PNP), conversely (with an NPN signal), an error message is generated by the diagnostic system.

\*\*\* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

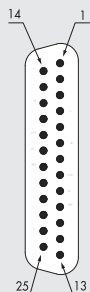
## COMPONENTS

- ① BODY: painted metal
- ② CONNECTOR: plug type
- ③ NAMEPLATE: with product code
- ④ LED: signal on and alarm
- ⑤ GRUB SCREW securing the DIN bar or bracket: galvanized steel

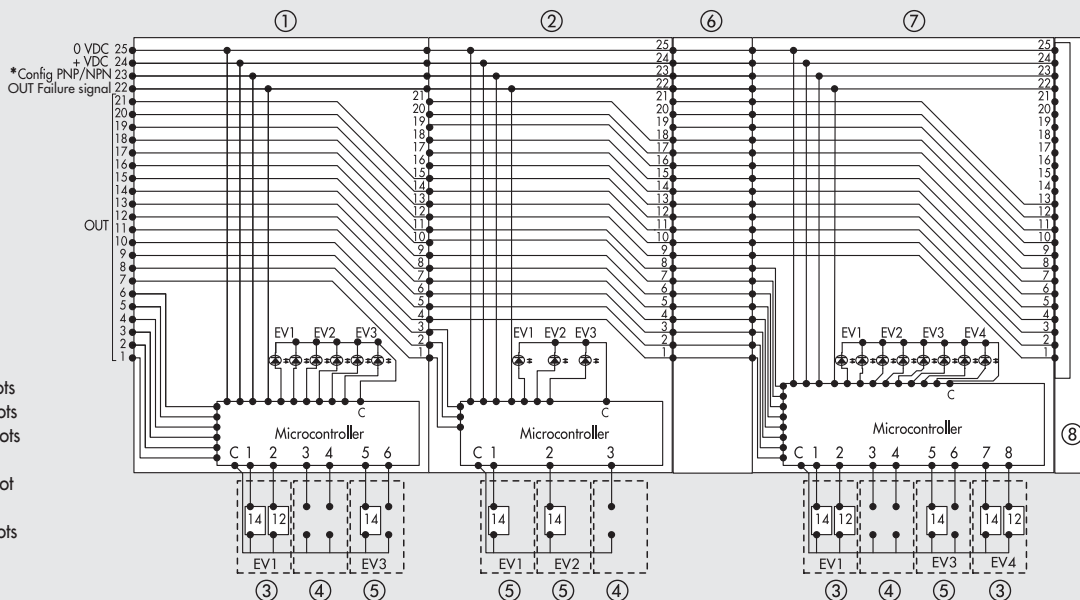


WIRING DIAGRAM

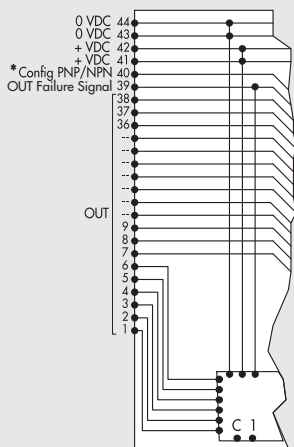
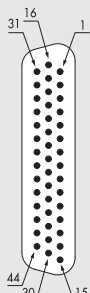
D-Sub 25-pin CONNECTOR



- ① 3-position base for 6 pilots
- ② 3-position base for 3 pilots
- ③ Valve with 2 solenoid pilots
- ④ Dummy valve or bypass
- ⑤ Valve with 1 solenoid pilot
- ⑥ Intermediate module
- ⑦ 4-position base for 8 pilots
- ⑧ Closed end-plate



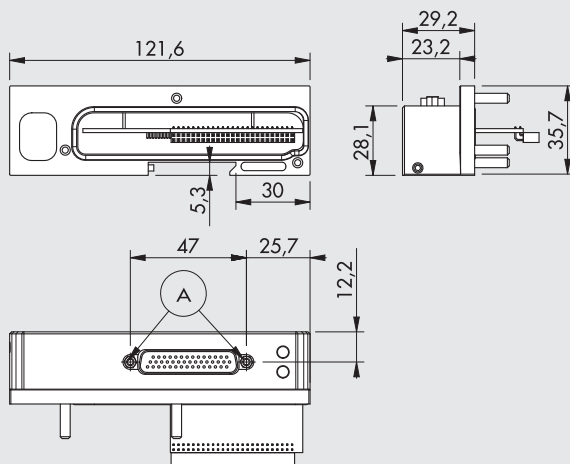
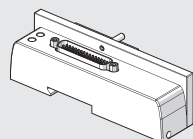
D-Sub 44-pin CONNECTOR



\* Connect to +VDC if (Out) valves with a POSITIVE signal are to be controlled  
Connect to 0VDC if (Out) valves with a NEGATIVE signal are to be controlled

DIMENSIONS - ORDERING CODES

DIMENSION OF A MULTI-POLE ELECTRICAL CONNECTION

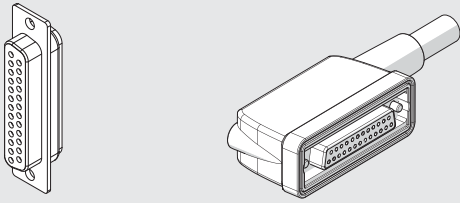


Ⓐ = Holes for D-Sub connector  
25-pin or 44-pin

Code	Description	Weight [g]
02282E025	EB 80 25-pin electrical connection	180
02282E044	EB 80 44-pin electrical connection	180

## ACCESSORIES

## IP65 25-PIN PRE-WIRED PLUG CONNECTOR

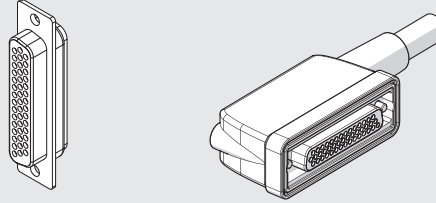


Code	Description	Weight [g]
02269A0100	IP65 25-pin 90° connector, UL cable L = 1 m	180
02269A0250	IP65 25-pin 90° connector, UL cable L = 2.5 m	365
02269A0500	IP65 25-pin 90° connector, UL cable L = 5 m	680
02269A1000	IP65 25-pin 90° connector, UL cable L = 10 m	1220
02269A2000	IP65 25-pin 90° connector, UL cable L = 20 m	2350
02269C0100	IP65 25-pin 90° connector, UL robotics, cable L = 1 m	180
02269C0250	IP65 25-pin 90° connector, UL robotics, cable L = 2.5 m	365
02269C0500	IP65 25-pin 90° connector, UL robotics, cable L = 5 m	680
02269C1000	IP65 25-pin 90° connector, UL robotics, cable L = 10 m	1220

Position of electrical contact	Colour of the corresponding wire	Function
1	White	Out 1
2	Brown	Out 2
3	Green	Out 3
4	Yellow	Out 4
5	Grey	Out 5
6	Pink	Out 6
7	Blue	Out 7
8	Red	Out 8
9	Black	Out 9
10	Violet	Out 10
11	Grey + Pink ring	Out 11
12	Red + Blue ring	Out 12
13	White + Green ring	Out 13
14	Brown + Green ring	Out 14
15	White + Yellow ring	Out 15
16	Yellow + Brown ring	Out 16
17	White + Grey ring	Out 17
18	Grey + Brown ring	Out 18
19	White + Pink ring	Out 19
20	Pink + Brown ring	Out 20
21	White + Blue ring	Out 21
22	Brown + Blue ring	Fault reporting
23	White + Red ring	Config. PNP/NPN *
24	Brown + Red ring	+VDC
25	White + Black ring	0VDC

\* Connect to +VDC if (Out) valves with a POSITIVE signal are to be controlled  
Connect to 0VDC if (Out) valves with a NEGATIVE signal are to be controlled

## IP65 44-PIN PRE-WIRED PLUG CONNECTOR



Code	Description	Weight [g]
02269B0100	IP65 44-pin 90° connector, UL cable L = 1 m	275
02269B0250	IP65 44-pin 90° connector, UL cable L = 2.5 m	630
02269B0500	IP65 44-pin 90° connector, UL cable L = 5 m	1180
02269B1000	IP65 44-pin 90° connector, UL cable L = 10 m	2210
02269B2000	IP65 44-pin 90° connector, UL cable L = 20 m	4340
02269D0100	IP65 44-pin 90° connector, UL robotics, cable L = 1 m	275
02269D0250	IP65 44-pin 90° connector, UL robotics, cable L = 2.5 m	630
02269D0500	IP65 44-pin 90° connector, UL robotics, cable L = 5 m	1180
02269D1000	IP65 44-pin 90° connector, UL robotics, cable L = 10 m	2210

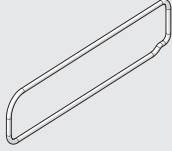
Position of electrical contact	Colour of the corresponding wire	Function
1	White	Out 1
2	Brown	Out 2
3	Green	Out 3
4	Yellow	Out 4
5	Grey	Out 5
6	Pink	Out 6
7	Blue	Out 7
8	Red	Out 8
9	Black	Out 9
10	Violet	Out 10
11	Grey + Pink ring	Out 11
12	Red + Blue ring	Out 12
13	White + Green ring	Out 13
14	Brown + Green ring	Out 14
15	White + Yellow ring	Out 15
16	Yellow + Brown ring	Out 16
17	White + Grey ring	Out 17
18	Grey + Brown ring	Out 18
19	White + Pink ring	Out 19
20	Pink + Brown ring	Out 20
21	White + Blue ring	Out 21
22	Brown + Blue ring	Out 22
23	White + Red ring	Out 23
24	Brown + Red ring	Out 24
25	White + Black ring	Out 25
26	Brown + Black ring	Out 26
27	Grey + Green ring	Out 27
28	Yellow + Grey ring	Out 28
29	Pink + Green ring	Out 29
30	Yellow + Pink ring	Out 30
31	Green + Blue ring	Out 31
32	Yellow + Blue ring	Out 32
33	Green + Red ring	Out 33
34	Yellow + Red ring	Out 34
35	Green + Black ring	Out 35
36	Yellow + Black ring	Out 36
37	Grey + Blue ring	Out 37
38	Pink + Blue ring	Out 38
39	Grey + Red ring	Fault reporting
40	Pink + Red ring	Config. PNP/NPN *
41	Grey + Black ring	+VDC
42	Pink + Black ring	+VDC
43	Blue + Black ring	0VDC
44	Red + Black ring	0VDC

\* Connect to +VDC if (Out) valves with a POSITIVE signal are to be controlled  
Connect to 0VDC if (Out) valves with a NEGATIVE signal are to be controlled



## SPARE PARTS

### EB 80 ELECTRICAL CONNECTION INTERFACE OR SEAL



Code	Description
02282R1003	EB80 electrical connection interface OR seal

Comes in 10-pc. packs

### NOTES

DISTRIBUTORS

EB 80 - MULTI-POLE ELECTRICAL CONNECTION - E

# EB 80 ELECTRICAL CONNECTION WITH FIELDBUS - E

The job of the electrical connection with fieldbus is to power the EB 80 systems, transmit control signals for the solenoid valves, send or receive signals for input/output management modules and control diagnostics. The system can be supplied with a very wide voltage range, so much so that the EB 80 island can be controlled either at 12VDC or 24VDC (patented). Overvoltages up to 30% of the rated value, i.e. up to 31.2V, are admitted. The minimum voltage for solenoid pilots can be 10.8V, i.e. 12V-10%. The modules come into parts: a lower part, with a single aluminium body separate from the bus protocol; an upper part with a technopolymer body dedicated to each specific bus protocol.



TECHNICAL DATA		
Supply voltage range	V	12 -10% 24 +30%
Minimum operating voltage	V	10.8 *
Maximum operating voltage	V	31.2
Maximum admissible voltage	V	32 ***
Power supply without controlled valves	W	4 for "Electrical connection - E" + 0.25 for each "Base - B"
Solenoid pilot power on start-up (Speed Up)	W	3 for 15 msec
Solenoid pilot power after start-up (holding)	W	0.3
Maximum admissible current	A	4 continuous, 6 instantaneous for valve supply 4 continuous, 6 instantaneous for bus and signal supply
Protection		Overload and short-circuit protected solenoid pilot Output
Diagnostics		LED signal on valve, LED on electrical connection and software message regarding: short-circuited solenoid pilot; solenoid pilot with coil failure; voltage out of range (undervoltage and overvoltage); module communication control; on switching, configuration other than that stored
Maximum number of solenoid pilots		128
Maximum number of simultaneously controllable solenoid pilots to actuate a greater number of solenoid pilots at the same time, add "Intermediate modules - M" with electrical connection		38
Maximum number of signals **		128 digital inputs, 128 digital outputs, 16 analogue inputs, 16 analogue outputs
Maximum number of nodes **		40 Bases for valves + 16 digital inputs+ 16 digital outputs+ 4 analogue inputs + 4 analogue outputs
Ambient temperature	°C	-10 to + 50
	°F	14 to 122
Versions		EtherNet/IP, EtherCAT, CANopen, Profinet IO, Profibus-DP, Ethernet POWERLINK, IO-Link
Degree of protection		IP65 (with connectors connected or plugged if not used)
Weight	g	350

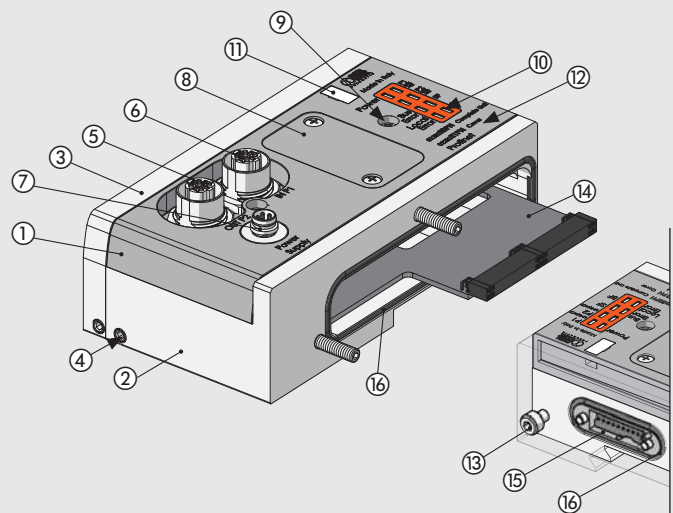
\* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24

\*\* For topological limits (maximum lengths, etc.) see the instructions.

\*\*\* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

## COMPONENTS

- ① UPPER PART BODY: technopolymer
- ② LOWER PART BODY: painted aluminium
- ③ END PLATE: painted aluminium
- ④ GRUB SCREW securing the DIN bar or bracket: galvanised steel
- ⑤ Fieldbus signal receive CONNECTOR
- ⑥ Fieldbus signal send CONNECTOR
- ⑦ M8 power supply CONNECTOR
- ⑧ COVER for access to bus address switches: technopolymer
- ⑨ SCREW securing the upper part to the lower part
- ⑩ LED light
- ⑪ NAMEPLATE: removable
- ⑫ IDENTIFICATION wording: laser etched
- ⑬ SCREW securing the end plate
- ⑭ CONNECTOR for solenoid valve base modules
- ⑮ CONNECTOR for input/output signal modules
- ⑯ GASKETS interfacing: NBR



**EtherNet/IP WIRING DIAGRAM**

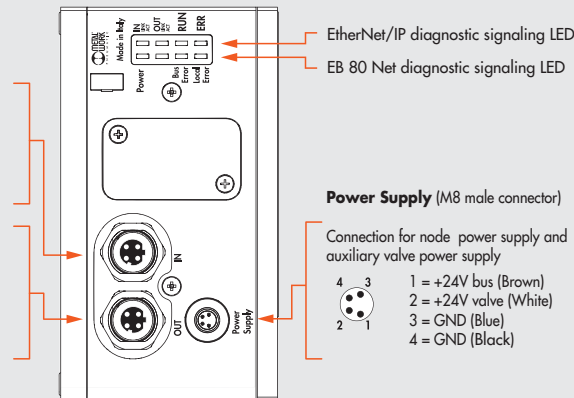
**Connection to the EtherNet/IP network**

**IN** (M12 female connector, D encoding)

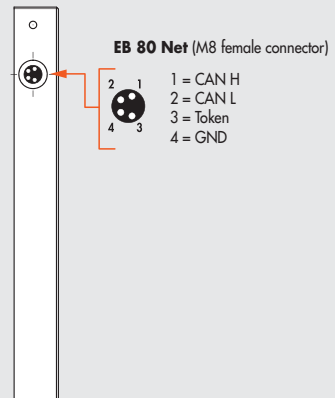
- 1 = TD+
- 2 = RD+
- 3 = TD-
- 4 = RD-
- Metal ring nut = Shield

**OUT** (M12 female connector, D encoding)

- 1 = TD+
- 2 = RD+
- 3 = TD-
- 4 = RD-
- Metal ring nut = Shield



**End plate with intermediate control**



**TECHNICAL DATA**

Fieldbus	10 - 100 Mbit/S - Full-duplex - Half-duplex - Supports auto-negotiation and Quick Connect
Factory settings	IP address: 192.168.193.32
Addressing	Software - DHCP hardware
Supply voltage range	12 -10% 24 +30%
Minimum operating voltage	10.8 *
Maximum operating voltage	31.2
Maximum admissible voltage	32 ***
Protection	Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections	Fieldbus: 2 M12 F, D encoding, internal switch. Power supply: M8, 4-pin
Diagnostics **	EtherNet/IP: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption	nominal lcc 180 mA at 24 V
Maximum number of pilots	128
Maximum number of digital inputs	128
Maximum number of digital outputs	128
Maximum number of analogue inputs	16
Maximum number of analogue outputs	16
Maximum number of inputs for temperatures	16
Data bit value	0 = non-active; 1 = active
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state

\* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24

\*\* Refer to the user manual for a detailed description.

\*\*\* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

**EtherCAT WIRING DIAGRAM**

**Connection to the EtherCAT network**

**IN** (M12 female connector, D encoding)

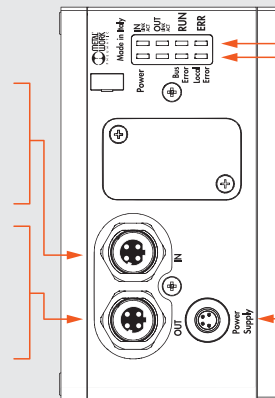


- 1 = TD+
  - 2 = RD+
  - 3 = TD-
  - 4 = RD-
- Metal ring nut = Shield

**OUT** (M12 female connector, D encoding)



- 1 = TD+
  - 2 = RD+
  - 3 = TD-
  - 4 = RD-
- Metal ring nut = Shield



- EtherCAT diagnostic signaling LED
- EB 80 Net diagnostic signaling LED

**Power Supply** (M8 male connector)

Connection for node power supply and auxiliary valve power supply



- 1 = +24V bus (Brown)
- 2 = +24V valve (White)
- 3 = GND (Blue)
- 4 = GND (Black)

**End plate with intermediate control**



**EB 80 Net** (M8 female connector)



- 1 = CAN H
- 2 = CAN L
- 3 = Token
- 4 = GND

TECHNICAL DATA	
Fieldbus	100 Mbit/S - Full-duplex - Supports auto-negotiation
Factory settings	module denomination: EB80series
Addressing	Automatic from the master depending on its topological position. Fixes with the second slave address function
Supply voltage range	V 12 -10% 24 +30%
Minimum operating voltage	V 10.8 *
Maximum operating voltage	V 31.2
Maximum admissible voltage	V 32 ***
Protection	Module protected from overload and polarity inversion. outputs protected from overloads and short-circuits.
Connections	Fieldbus: 2 M12 F D encoding, internal switch. Power supply: M8, 4-PIN
Diagnostics **	EtherCAT: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption	nominal lcc 180 mA at 24 V
Maximum number of pilots	128
Maximum number of digital inputs	128
Maximum number of digital outputs	128
Maximum number of analogue inputs	16
Maximum number of analogue outputs	16
Maximum number of inputs for temperatures	16
Data bit value	0 = non-active; 1= active
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state

\* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24  
 \*\* Refer to the user manual for a detailed description.  
 \*\*\* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

CANopen WIRING DIAGRAM

Connection to the CANopen network

IN (M12 male connector, A encoding)

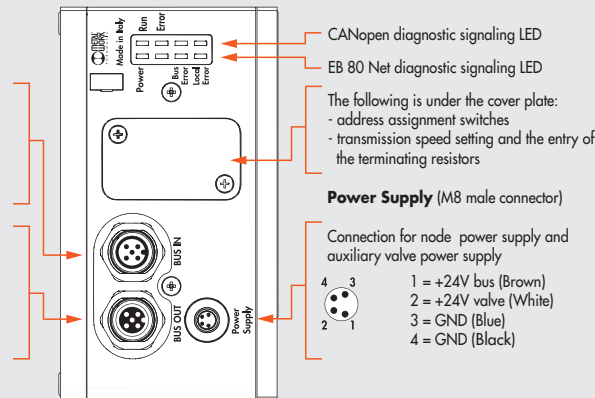


- 1 = TD+
- 2 = RD+
- 3 = TD-
- 4 = RD-
- Metal ring nut = Shield

OUT (M12 female connector, A encoding)



- 1 = TD+
- 2 = RD+
- 3 = TD-
- 4 = RD-
- Metal ring nut = Shield



End plate with intermediate control



EB 80 Net (M8 female connector)

- 1 = CAN H
- 2 = CAN L
- 3 = Token
- 4 = GND

CANopen diagnostic signaling LED  
 EB 80 Net diagnostic signaling LED  
 The following is under the cover plate:  
 - address assignment switches  
 - transmission speed setting and the entry of the terminating resistors  
**Power Supply** (M8 male connector)  
 Connection for node power supply and auxiliary valve power supply  
 1 = +24V bus (Brown)  
 2 = +24V valve (White)  
 3 = GND (Blue)  
 4 = GND (Black)

TECHNICAL DATA	
Fieldbus	Complying with CiA DS401 specification
Factory settings	Module denomination: EB80series - Address 5
Addressing	Hardware via DIP SWITCH
Supply voltage range	12 -10% 24 +30%
Minimum operating voltage	10.8 *
Maximum operating voltage	31.2
Maximum admissible voltage	32 ***
Protection	Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections	Fieldbus: BUS IN M12 Male, 5 poles, A encoding - BUS OUT M12 Female, 5 poles, encoding A - Power supply: M8, 4-PIN
Diagnostics**	CANopen: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption	nominal lcc 180 mA at 24 V
Maximum number of pilots	128
Maximum number of digital inputs	128
Maximum number of digital outputs	128
Maximum number of analogue inputs	16
Maximum number of analogue outputs	16
Maximum number of inputs for temperatures	16
Data bit value	0 = non-active; 1 = active
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state

\* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24  
 \*\* Refer to the user manual for a detailed description.  
 \*\*\* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

**Profinet IO WIRING DIAGRAM**

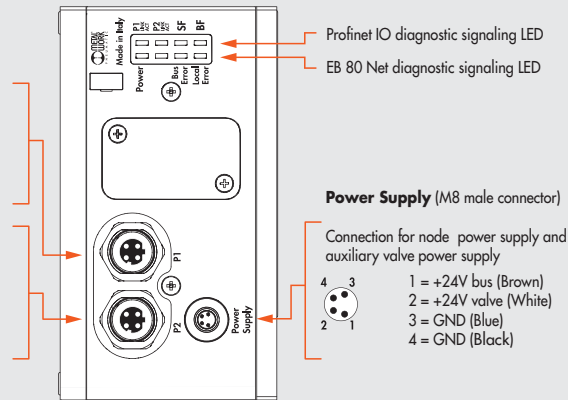
**Connection to the Profinet IO network**

**P1** (M12 female connector, D encoding)

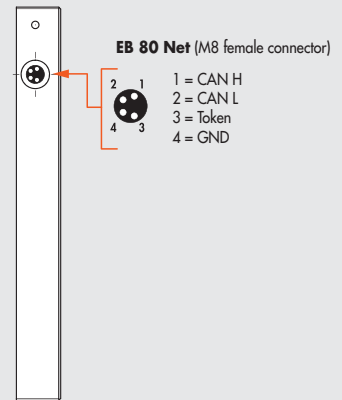
- 1 = TD+
- 2 = RD+
- 3 = TD-
- 4 = RD-
- Metal ring nut = Shield

**P2** (M12 female connector, D encoding)

- 1 = TD+
- 2 = RD+
- 3 = TD-
- 4 = RD-
- Metal ring nut = Shield



**End plate with intermediate control**



**TECHNICAL DATA**

Fieldbus	100 Mbit/s - Full-duplex – Supports Fast Start Up, RT communication, Shared Device, Identification & Maintenance 1-4	
Factory settings	Module denomination: EB80series – IP address: 0.0.0.0	
Addressing	DCP Software	
Supply voltage range	V	12 -10% 24 +30%
Minimum operating voltage	V	10.8 *
Maximum operating voltage	V	31.2
Maximum admissible voltage	V	32 ***
Protection	Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.	
Connections	Fieldbus: 2 M12 Female, D encoding, internal switch. Power supply: M8, 4-PIN	
Diagnostics **	Profinet IO: via local LED lights and software messages. Outputs: via local LED lights and state bytes	
Bus power supply current absorption	nominal lcc 180 mA at 24 V	
Maximum number of pilots	128	
Maximum number of digital inputs	128	
Maximum number of digital outputs	128	
Maximum number of analogue inputs	16	
Maximum number of analogue outputs	16	
Maximum number of inputs for temperatures	16	
Data bit value	0 = non-active; 1= active	
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state	

\* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24

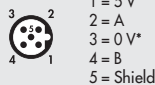
\*\* Refer to the user manual for a detailed description.

\*\*\* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

Profibus-DP WIRING DIAGRAM

Connection to the Profibus-DP network

**BUS IN** (M12 Male Connector, B encoding)



1 = 5 V\*

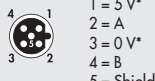
2 = A

3 = 0 V\*

4 = B

5 = Shield

**BUS OUT** (M12 female connector, B encoding)



1 = 5 V\*

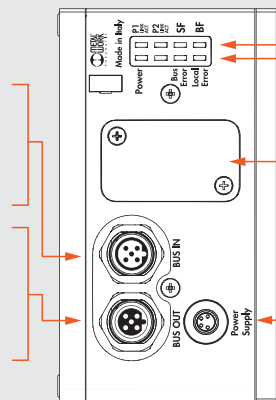
2 = A

3 = 0 V\*

4 = B

5 = Shield

\* DO NOT CONNECT PIN 1 and PIN 3:  
Only the power supply of external terminating resistors must be used.



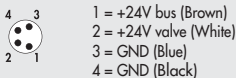
Profibus-DP diagnostic signaling LED

EB 80 Net diagnostic signaling LED

The following is under the cover plate:  
- address assignment switches  
- the entry of the terminating resistors

**Power Supply** (M8 male connector)

Connection for node power supply and auxiliary valve power supply



1 = +24V bus (Brown)

2 = +24V valve (White)

3 = GND (Blue)

4 = GND (Black)

End plate with intermediate control



**EB 80 Net** (M8 female connector)

1 = CAN H

2 = CAN L

3 = Token

4 = GND

TECHNICAL DATA	
Fieldbus	Complying with Profibus-DP DIN E 1924 specification
Factory settings	Module denomination: EB80series - Address 5
Addressing	Hardware via ROTARY SWITCH
Supply voltage range	12 -10% 24 +30%
Minimum operating voltage	10.8 *
Maximum operating voltage	31.2
Maximum admissible voltage	32 ***
Protection	Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections	Fieldbus: BUS IN M12 Male, 5 poles, B encoding - BUS OUT M12 Female, 5 poles, B encoding - Power supply: M8, 4-PIN
Diagnostics **	Profibus-DP: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption	nominal Icc 180 mA at 24 V
Maximum number of pilots	128
Maximum number of digital inputs	128
Maximum number of digital outputs	128
Maximum number of analogue inputs	16
Maximum number of analogue outputs	16
Maximum number of inputs for temperatures	16
Data bit value	0 = non-active; 1 = active
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state

\* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24

\*\* Refer to the user manual for a detailed description.

\*\*\* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

**Ethernet POWERLINK WIRING DIAGRAM**

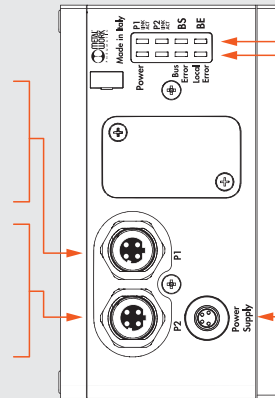
**Connection to the Ethernet POWERLINK network**

**P1** (M12 female connector, D encoding)

- 1 = TD+
- 2 = RD+
- 3 = TD-
- 4 = RD-
- Metal ring nut = Shield

**P2** (M12 female connector, D encoding)

- 1 = TD+
- 2 = RD+
- 3 = TD-
- 4 = RD-
- Metal ring nut = Shield



Ethernet POWERLINK diagnostic signaling LED  
EB 80 Net diagnostic signaling LED

**Power Supply** (M8 male connector)

- Connection for node power supply and auxiliary valve power supply
- 1 = +24V bus (Brown)
  - 2 = +24V valve (White)
  - 3 = GND (Blue)
  - 4 = GND (Black)

**End plate with intermediate control**



**EB 80 Net** (M8 female connector)

- 1 = CAN H
- 2 = CAN L
- 3 = Token
- 4 = GND

**TECHNICAL DATA**

Fieldbus	100 Mbit/S - Half-duplex - Supports auto-negotiation
Factory settings	module denomination: EB80series address number 2
Addressing	Hardware by rotary switch
Supply voltage range	12 -10% 24 +30%
Minimum operating voltage	10.8 *
Maximum operating voltage	31.2
Maximum admissible voltage	32 ***
Protection	Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections	Fieldbus: 2 M12 Female, D encoding, internal switch. Power supply: M8, 4-PIN
Diagnostics **	Ethernet POWERLINK: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption	nominal Icc 180 mA at 24 V
Maximum number of pilots	128
Maximum number of digital inputs	128
Maximum number of digital outputs	128
Maximum number of analogue inputs	16
Maximum number of analogue outputs	16
Maximum number of inputs for temperatures	16
Data bit value	0 = non-active; 1 = active
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state

\* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24

\*\* Refer to the user manual for a detailed description.

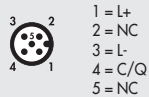
\*\*\* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.



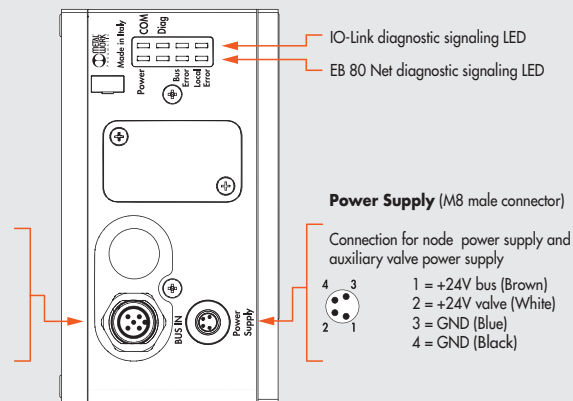
IO-Link WIRING DIAGRAM

Connection to the IO-Link network

**BUS IN** (M12 female connector, A encoding)



- 1 = L+
- 2 = NC
- 3 = L-
- 4 = C/Q
- 5 = NC



**Power Supply** (M8 male connector)

Connection for node power supply and auxiliary valve power supply

- 1 = +24V bus (Brown)
- 2 = +24V valve (White)
- 3 = GND (Blue)
- 4 = GND (Black)

End plate with intermediate control



**EB 80 Net** (M8 female connector)

- 1 = CAN H
- 2 = CAN L
- 3 = Token
- 4 = GND

TECHNICAL DATA

Fieldbus		IO-Link version 1.1
Communication speed	Kbps	230.4 (COM3)
Vendor ID / Device ID		1046 (hex 0x0416) / 32 (hex 0x000020)
Minimum cycle time	ms	2.8
Process data length		5 byte of Input / 4 byte of Output
Supply voltage range (M8 connector)	V	12 -10% 24 +30%
Minimum operating voltage	V	10.8 *
Maximum operating voltage	V	31.2
Maximum admissible voltage	V	32 ***
IO-Link power supply (L+L - Bus IN connector)	VDC	min 20, max 30
Protection		Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections		Fieldbus: M12 male, A-coded - port class A. Power supply: M8, 4-PIN
Diagnostics **		IO-Link: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Power supply current absorption		See IO-Link instruction manual
Maximum number of pilots		32
Maximum number of digital inputs		32
Data bit value		0 = non-active; 1 = active
State of outputs in the absence of communication		Configurable for each output: non-active, holding of the state, setting of a preset state

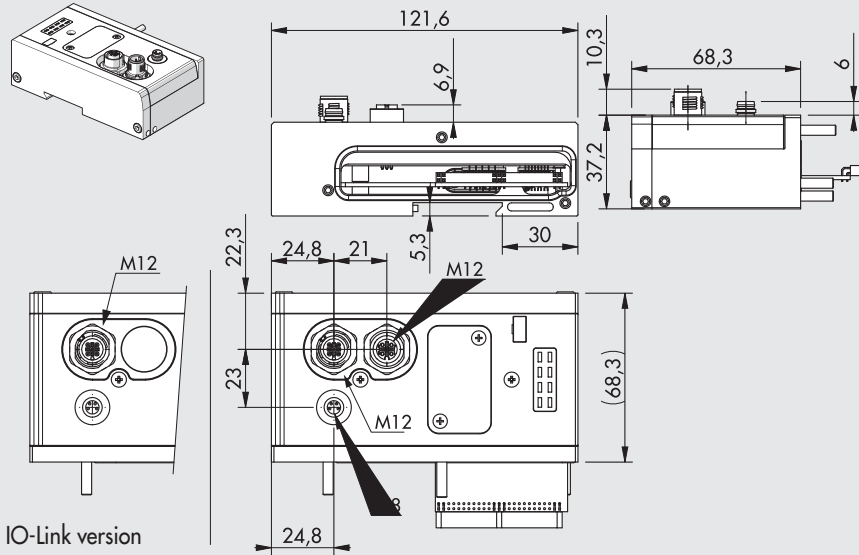
\* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24

\*\* Refer to the user manual for a detailed description.

\*\*\* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

## DIMENSIONS - ORDERING CODES

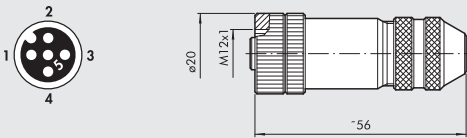
### ELECTRICAL CONNECTION FIELDBUS DIMENSION



Code	Description	Weight [g]
02282E0EN	EB 80 Electrical connection EtherNet/IP	350
02282E0EC	EB 80 Electrical connection EtherCAT	350
02282E0PN	EB 80 Electrical connection Profinet IO	350
02282E0CN	EB 80 Electrical connection CANopen	350
02282E0PB	EB 80 Electrical connection Profibus-DP	350
02282E0PL	EB 80 Electrical connection Ethernet POWERLINK	350
02282E0IO	EB 80 Electrical connection IO-Link	350

## ACCESSORIES

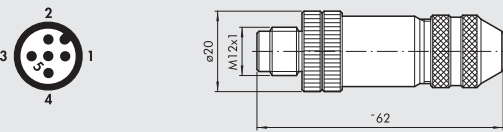
### M12 FEMALE CONNECTOR FOR BUS-IN, A ENCODING



Code	Description
0240009055	M12 5-pin female connector, encoding A

Note: Can be used for Bus CANopen and IO-Link

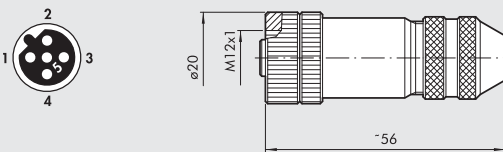
### M12 MALE CONNECTOR FOR BUS-IN, A ENCODING



Code	Description
0240009038	M12 5-pin male connector, encoding A

Note: Can be used for Bus CANopen

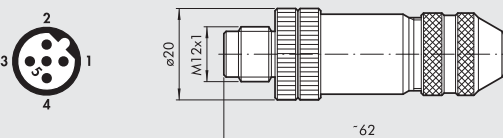
### M12 FEMALE CONNECTOR FOR BUS-IN, B ENCODING



Code	Description
0240009036	M12 5-pin female connector, encoding B

Note: Can be used for Profibus-DP

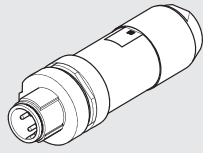
### M12 MALE CONNECTOR FOR BUS-IN, B ENCODING



Code	Description
0240009035	M12 5-pin male connector, encoding B

Note: Can be used for Profibus-DP

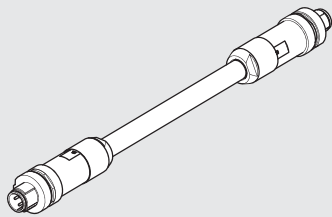
**M12 BUS CONNECTOR, D ENCODING**



Code	Description
0240005051	M12 4-pin BUS connector, D-coded

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP, Ethernet POWERLINK)

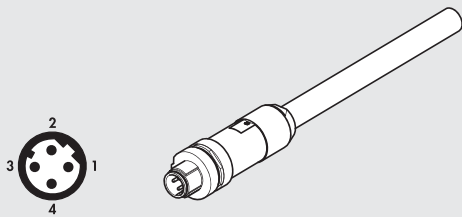
**STRAIGHT CONNECTOR FOR M12-M12 BUS, D-CODED**



Code	Description
0240005103	Straight connector for M12-M12 4-pin BUS, D-coded, with 3 m cable
0240005105	Straight connector for M12-M12 4-pin BUS, D-coded, with 5 m cable
0240005110	Straight connector for M12-M12 4-pin BUS, D-coded, with 10 m cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP, Ethernet POWERLINK)

**STRAIGHT CONNECTOR FOR M12 BUS, D-CODED**

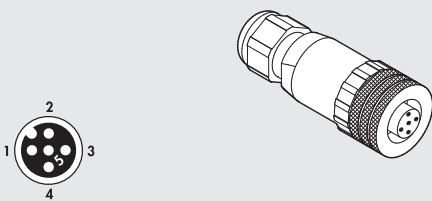


Pin	Cable color
1	Yellow
2	White
3	Red
4	Blue

Code	Description
0240005093	Straight connector for M12 4-pin BUS, D-coded, with 3 m cable
0240005095	Straight connector for M12 4-pin BUS, D-coded, with 5 m cable
0240005100	Straight connector for M12 4-pin BUS, D-coded, with 10 m cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP, Ethernet POWERLINK)

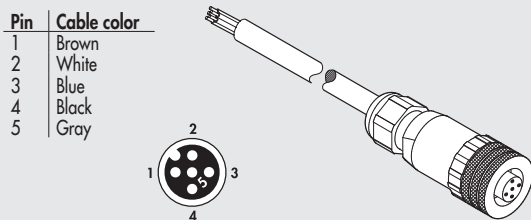
**STRAIGHT CONNECTOR FOR M12, A-CODED**



Code	Description
W0970513001	5-PIN M12X1 straight connector

Note: Can be used for IO-Link

**STRAIGHT CONNECTOR WITH WIRE FOR M12, A-CODED**

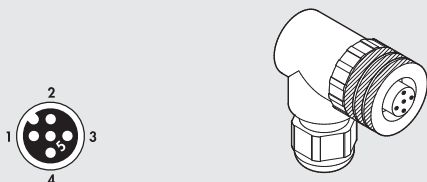


Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Gray

Code	Description
W0970513002	5-PIN M12X1 straight connector with wire L = 5 m

Note: Can be used for IO-Link

**90° CONNECTOR FOR M12, A-CODED**

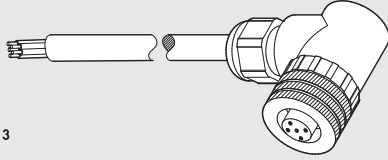


Code	Description
W0970513003	M12X1 5-PIN 90° connector

Note: Can be used for IO-Link

**90° CONNECTOR WITH WIRE FOR M12, A-CODED**

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Gray



Code	Description
W0970513004	M12X1 5-PIN 90° connector with wire L = 5 m

Note: Can be used for IO-Link

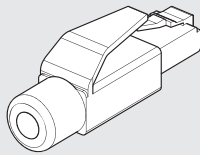
**CABLE FOR BUS**



Code	Description
0240005220*	Cable for BUS 20 m
0240005250	Cable for BUS CANopen BUS 20 m

\* Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP, Ethernet POWERLINK)

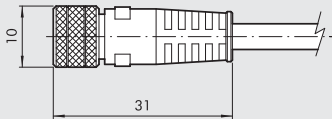
**RJ45 CONNECTOR**



Code	Description
0240005050	RJ45 connector with 4 contacts according to IEC 60 603-7

**M8 CONNECTOR FOR POWER SUPPLY**

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 3 m
0240009037	M8 4-pin female connector for power supply, cable L = 5 m
0240009058	M8 4-pin female connector for power supply, cable L = 10 m
0240009059	M8 4-pin female connector for power supply, cable L = 15 m

**M8-M12 PLUG**



Code	Description
0240009039	Plug for M8 connector
0240009040	Plug for M12 connector

**NOTES**



## EB 80 ADDITIONAL ELECTRICAL CONNECTION - E

The additional electrical connection can be used to connect different EB 80 systems to a single bus node. To do this, the main island is equipped with a C3-type closed end plate, equipped with an M8 connector.

An M8-M8 connected cable relays the signal to the additional system. The system can be supplied with a very wide range of voltages, so much so that the EB 80 island can be controlled at either 12VDC or 24VDC (patented). Overvoltages up to 30% of the nominal value are admitted, i.e. up to 31.2V. The minimum voltage for the solenoid pilots can be 10.8V, i.e. 12V-10%.

The modules consist of two parts: a lower part with a single aluminium body similar to that used for fieldbuses; an upper part with a technopolymer body specific for the additional model.



TECHNICAL DATA		
Supply voltage range	V	12 -10% 24 +30%
Minimum operating voltage	V	10.8 *
Maximum operating voltage	V	31.2
Maximum admissible voltage	V	32 ***
Power supply without controlled valves	W	4 for "Electrical connection - E" + 0.25 for each "Base - B"
Solenoid pilot power on start-up (Speed Up)	W	3 for 15 msec
Solenoid pilot power after start-up (holding)	W	0.3
Maximum admissible current	A	4 continuous, 6 instantaneous for valve supply 4 continuous, 6 instantaneous for bus and signal supply
Protection		Overload and short-circuit protected solenoid pilot Output
Diagnostics		LED signal on valve, LED on electrical connection and software message regarding: short-circuited solenoid pilot; solenoid pilot with coil failure; voltage out of range (undervoltage and overvoltage); module communication control; on switching, configuration other than that stored.
Maximum number of solenoid pilots		128 **
Maximum number of simultaneously controllable solenoid pilots (to actuate a greater number of pilots at the same time, add "Intermediate modules - M" with "Electrical connection - E")		38
Maximum number of signals **		128 digital inputs, 128 digital outputs, 16 analogue inputs, 16 analogue outputs
Maximum number of nodes **		40 Bases for valves + 16 Digital inputs + 16 Digital outputs + 4 Analogue inputs + 4 Analogue outputs
Maximum length of the connection cables ****	m	40
Ambient temperature	°C	-10 to + 50
	°F	14 to 122
Degree of protection		IP65 (with connectors connected or plugged if not used)
Weight	g	320

\* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24

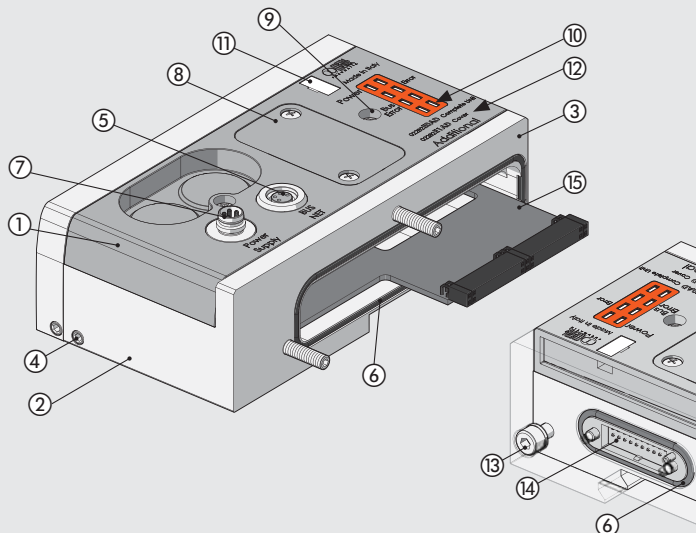
\*\* Total numbers, by summing up those of the fieldbus connection and all additional connections.

\*\*\* **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

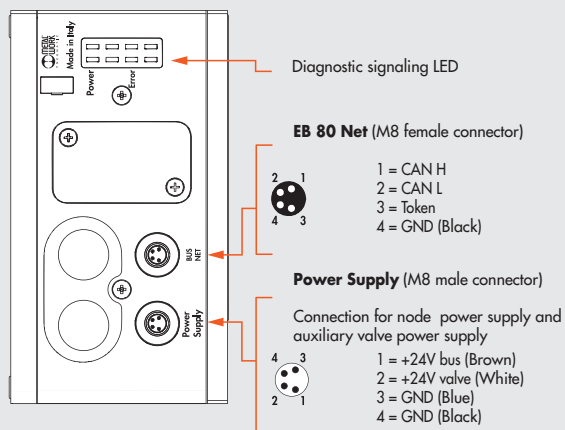
\*\*\*\* Sum of the lengths of the cables between the fieldbus electrical connection and any additional electrical connections.

COMPONENTS

- ① UPPER PART BODY: technopolymer
- ② LOWER PART BODY: painted aluminium
- ③ END PLATE: painted aluminium
- ④ GRUB SCREW securing the DIN bar or bracket: galvanised steel
- ⑤ CONNECTOR for connection to the valve island (main one)
- ⑥ GASKETS interfacing: NBR
- ⑦ M8 power supply CONNECTOR
- ⑧ COVER for access to bus address switches: technopolymer
- ⑨ SCREW securing the upper part to the lower part
- ⑩ LED light
- ⑪ NAMEPLATE: removable
- ⑫ IDENTIFICATION wording: laser etched
- ⑬ SCREW securing the end plate
- ⑭ CONNECTOR for solenoid valve base modules
- ⑮ CONNECTOR for Input/Output signal modules

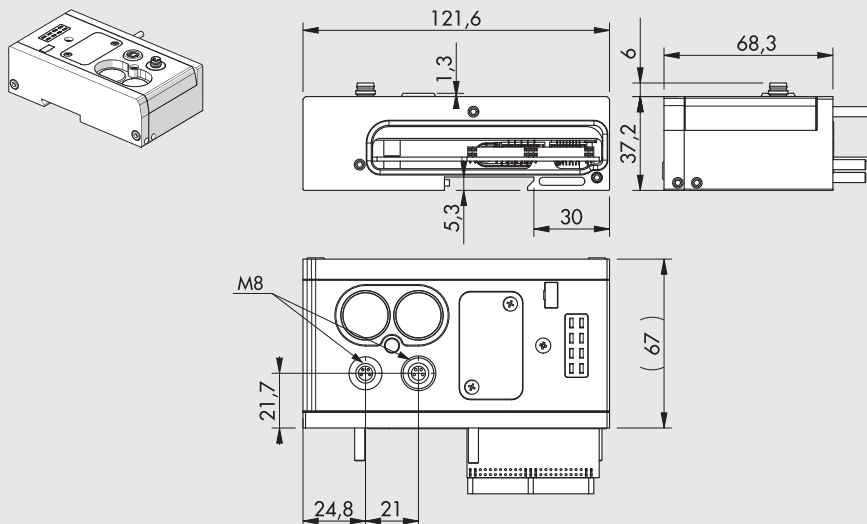


WIRING DIAGRAM



DIMENSIONS - ORDERING CODES

DIMENSION OF ADDITIONAL ELECTRICAL CONNECTION



Code	Description	Weight [g]
02282E0AD	Additional electrical connection EB 80	320

## ACCESSORIES

### M8 CONNECTOR FOR POWER SUPPLY



Pin	Cable color
1	Brown
2	White
3	Blue
4	Black

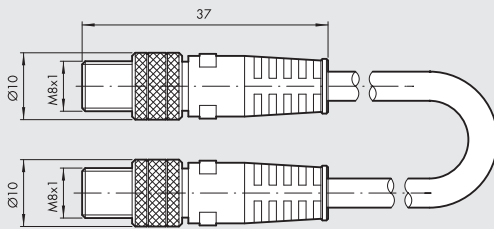
Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 3 m
0240009037	M8 4-pin female connector for power supply, cable L = 5 m
0240009058	M8 4-pin female connector for power supply, cable L = 10 m
0240009059	M8 4-pin female connector for power supply, cable L = 15 m

### M8 PLUG



Code	Description
0240009039	Plug for M8 connector

### M8 CONNECTOR WITH CABLE FOR CONNECTION BETWEEN EB 80 ISLANDS

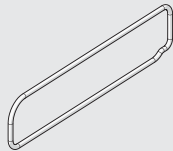


Code	Description	Weight [g]
0240010201	M8-M8 4-pin male shielded cable L = 1 m	45
0240010205	M8-M8 4-pin male shielded cable L = 5 m	185
0240010210	M8-M8 4-pin male shielded cable L = 10 m	330
0240010215	M8-M8 4-pin male shielded cable L = 15 m	475
0240010220	M8-M8 4-pin male shielded cable L = 20 m	620

**N.B.:** For correct operation of the entire EB 80 system, use M8-M8 pre-wired, twisted and shielded cables only.

## SPARE PARTS

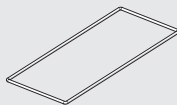
### EB 80 ELECTRICAL CONNECTION INTERFACE OR-SEAL



Code	Description
02282R1003	EB 80 electrical connection interface OR-seal

Comes in 10-pc. packs

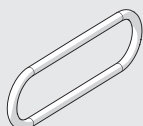
### GASKET BETWEEN EB 80 BASE AND COVER BUS/SIGNALS



Code	Description
02282R1004	Kit of gaskets between EB 80 base and cover bus/signals

Comes in 10-pc. packs

### EB 80 BUS/SIGNAL INTERFACE OR-SEAL



Code	Description
02282R1005	EB 80 BUS/Signal interface OR-seal

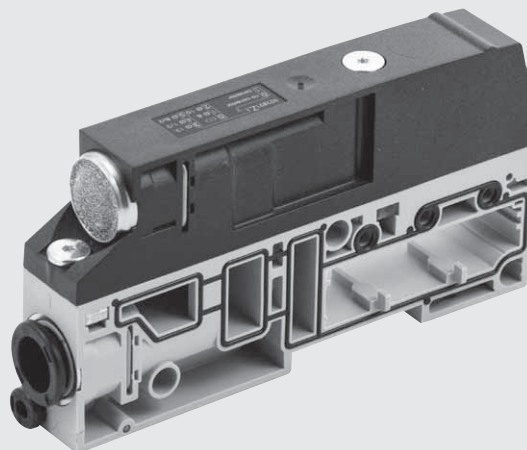
Comes in 10-pc. packs



# EB 80 COMPRESSED-AIR SUPPLY - P

The Compressed air supply - P modules power the valve base and collect the air coming from the relief ports. Various versions are available, with pipe fittings of different diameter. The product code also identifies whether the module is set to supply the pilots without servo-assistance, in which case you only need to connect compressed air to the supply fitting; or with servo-assistance (recommended), in which case you only need to connect the compressed air to the Ø 4 pilot fitting. Switching from servo to non-servo operation or vice versa is possible, however, by changing the position of the orange gasket situated between the lower and the upper part of the module; the configuration is identified by a tab protruding at the back.

Relief ports 3 and 5 can be either connected using a silencer or conveyed via a fitting. A version with separate ports 3 and 5 is also available. This feature is useful in versions with pilot servo-assistance to power the valves from ports 3 and 5, at different pressures from vacuum to 8 bar at different pressures from vacuum to 8 bar, including the version to configure a fieldbus island with signal modules only, without the pneumatic part.

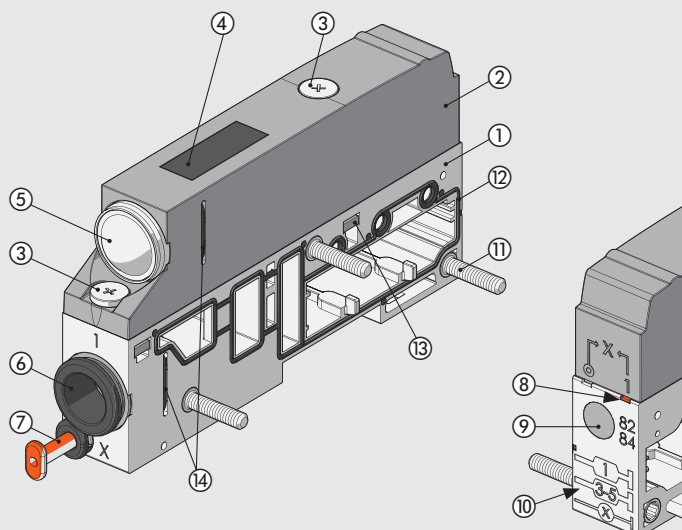


## TECHNICAL DATA

Operating pressure					
Non-servo versions and solenoid pilot servo pressure		<b>5/2 and 5/3</b>		<b>2/2 and 3/2</b>	
	bar	3 to 8		min. (see graph on page B2.51) / max. 8	
	MPa	0.3 to 0.8		min. (see graph on page B2.51) / max. 0.8	
	psi	43 to 116		min. (see graph on page B2.51) / max. 116	
Assisted valves	bar	Vacuum to 10			
	MPa	Vacuum to 1			
	psi	Vacuum to 145			
Ambient temperature	°C	-10 to + 50			
	°F	14 to 122			
Flow rate at 6.3 bar ΔP 1 bar		<b>Ø 8 (5/16")</b>	<b>Ø 10</b>	<b>Ø 12</b>	<b>Ø 1/2"</b>
Feeding (port 1)	Nl/min	1800	2800	3500	3500
Exhaust with fitting (ports 3 and 5)	Nl/min	2000	3200	4400	4400
Separate exhausts Ø 8 (N.B.: Pmax 8 bar)	Nl/min	1800 x 2	-	-	-
Flow rate at 6.3 bar free exhaust					
Exhaust with fitting (ports 3 and 5)	Nl/min	2700	3900	6100	6100
Silenced exhaust	Nl/min			3600	
Exhaust with fitting Ø12 and silencer W0970530086	Nl/min			6000	
Separate exhausts Ø 8 (N.B.: Pmax 8 bar)	Nl/min	2700 x 2	-	-	-
Fluid		Unlubricated air			
Versions		Silenced relief or conveyed relief, fittings for pipes Ø 8, 10, 12, 1/2"			
Degree of protection		IP65			
Weight	g	140	130	125	125

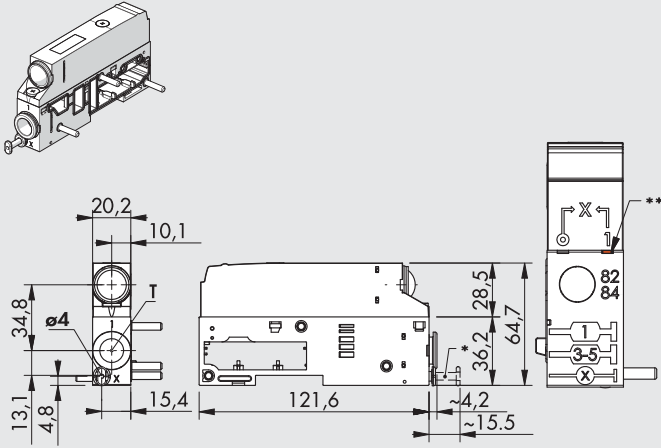
## COMPONENTS

- ① LOWER PART BODY: technopolymer
- ② UPPER PART BODY: technopolymer
- ③ SCREWS securing the island bodies: galvanised steel (Tightening torque: 1.2 Nm)
- ④ TAG: with laser etched wording - technopolymer
- ⑤ RELIEF: silencer or pipe fitting
- ⑥ POWER SUPPLY: pipe fitting
- ⑦ PILOTING (X): Ø 4 pipe fitting
- ⑧ INDICATOR: indicates whether pilot power supply is separate or not
- ⑨ PILOT RELIEF: HDPE silencer
- ⑩ PICTOGRAM: showing compressed air system layout
- ⑪ TIE ROD: nickelled steel
- ⑫ GASKET: NBR
- ⑬ THREADED PLATE: galvanised steel
- ⑭ CARTRIDGE FIXING CLIP: stainless steel



## DIMENSIONS - ORDERING CODES

### COMPRESSED AIR SUPPLY - SILENCED RELIEF

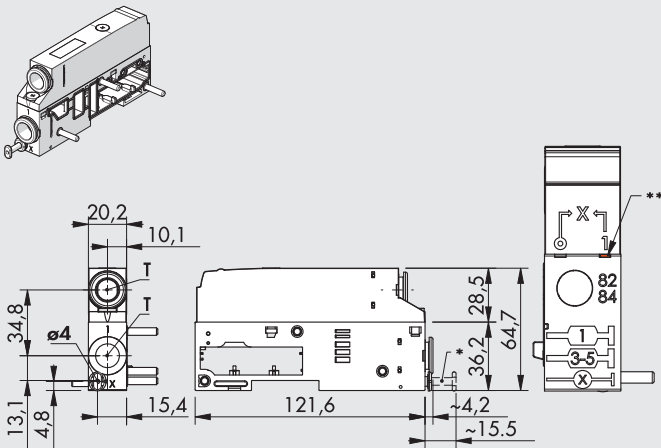


- \* R9 plug for NON-SERVOASSISTED versions
- \*\* Orange tab in SERVO-ASSISTED (⊙) or NON-SERVO-ASSISTED (1) position

Symbol	T - Pipe fitting	Code	Weight [g]
	Ø 8 (5/16")	02282P1XZ00	140
	Ø 10	02282P2XZ00	130
	Ø 12	02282P3XZ00	125
	Ø 1/2"	02282P5XZ00	125

	Ø 8 (5/16")	02282P1IZ00	140
	Ø 10	02282P2IZ00	130
	Ø 12	02282P3IZ00	125
	Ø 1/2"	02282P5IZ00	125

### COMPRESSED AIR SUPPLY - CONVEYED RELIEF

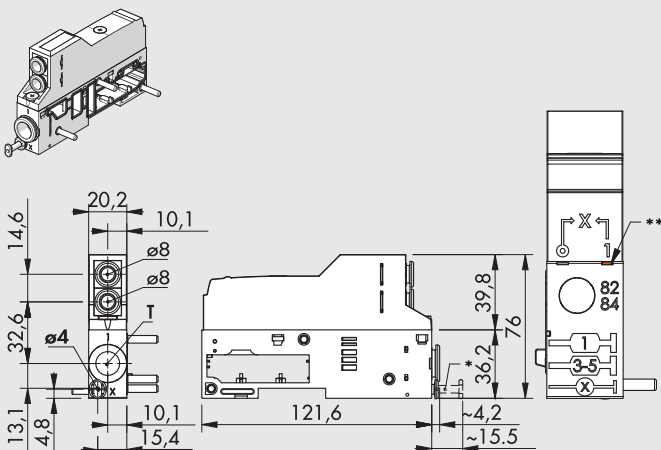


- \* R9 plug for NON-SERVOASSISTED versions
- \*\* Orange tab in SERVO-ASSISTED (⊙) or NON-SERVO-ASSISTED (1) position

Symbol	T - Pipe fitting	Code	Weight [g]
	Ø 8 (5/16")	02282P1XZ10	140
	Ø 10	02282P2XZ20	130
	Ø 12	02282P3XZ30	125
	Ø 1/2"	02282P5XZ50	125

	Ø 8 (5/16")	02282P1IZ10	140
	Ø 10	02282P2IZ20	130
	Ø 12	02282P3IZ30	125
	Ø 1/2"	02282P5IZ50	125

### COMPRESSED AIR SUPPLY - SEPARATE RELIEFS



- \* R9 plug for NON-SERVOASSISTED versions
- \*\* Orange tab in SERVO-ASSISTED (⊙) or NON-SERVO-ASSISTED (1) position

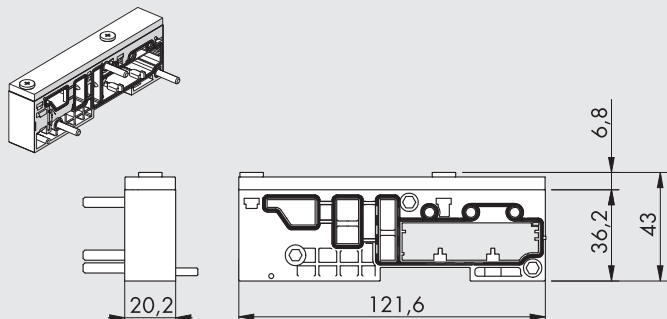
Symbol	T - Pipe fitting	Code	Weight [g]
	Ø 8 (5/16")	02282P1XZ60	155
	Ø 10	02282P2XZ60	145
	Ø 12	02282P3XZ60	140
	Ø 1/2"	02282P5XZ60	140

N.B.: Maximum pressure in the ports 3 and 5: 8 bar

	Ø 8 (5/16")	02282P1IZ60	155
	Ø 10	02282P2IZ60	145
	Ø 12	02282P3IZ60	140
	Ø 1/2"	02282P5IZ60	140

N.B.: Maximum pressure in the ports 3 and 5: 8 bar

MODULE FOR ELECTRIC VERSION ONLY



Code	Description	Weight [g]
02282P91Z90	Module for electric version only	120

N.B.: Version used to make up an EB 80 island without pneumatic part, but only with "S" signal modules and fieldbus or additional electrical connection "E". Bases and valves cannot be added.

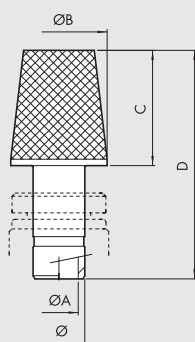
KEY TO CODES

02282	P	3	1	Z	3	0
FAMILY	SUBSYSTEM	PORT PIPE 1	PILOT SERVO-ASSISTED	UPPER PART	PORTS 3 AND 5 CONNECTION	SPECIALTY
02282 EB 80	P Compressed air supply	1 Pipe Ø 8 (5/16") 2 Pipe Ø 10 3 Pipe Ø 12 5 Pipe Ø 1/2"	1 Non-servo-assisted X Servo-assisted	Z The upper part is present	0 Silencer ▲ 1 Pipe Ø 8 (5/16") ▲ 2 Pipe Ø 10 ▲ 3 Pipe Ø 12 ▲ 5 Pipe Ø 1/2" 6 2 pipes Ø 8 (5/16") (one for port 3, one for port 5) 9 Without connection	0 Standard
		9 Module for electric version only	1 Non-servo-assisted			

▲ For ports 3 and 5 use the same pipe Ø of port 1.

ACCESSORIES

SILENCER FOR FITTING

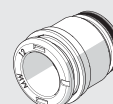


Ø	Ø A	Ø B	C	D
8	6	15	18	35.7
12	10	18.8	29	51.5

Code	Description	Weight [g]
W0970530084	Silencer for fitting, Ø 8	15
W0970530086	Silencer for fitting, Ø 12	24

SPARE PARTS

CARTRIDGE



Code	Description	Ø
02282R2110	EB 80 silencer cartridge kit	silencer
02282R2113	EB 80 Ø 8 power supply round cartridge kit	8 (5/16")
02282R2114	EB 80 Ø 10 power supply round cartridge kit	10
02282R2115	EB 80 Ø 12 power supply round cartridge kit	12
02282R2118	EB 80 Ø 1/2 power supply round cartridge kit	1/2"

Comes in 10-pc. packs

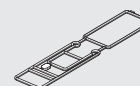
BASE INTERFACE GASKET



Code	Description
02282R1000	EB 80 base interface gasket kit

Comes in 10-pc. packs

LOWER /UPPER BODY GASKET



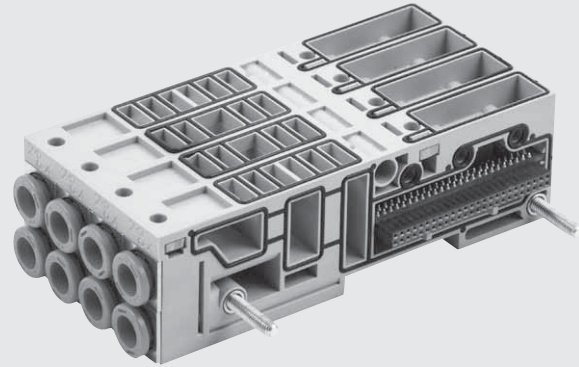
Code	Description
02282R1001	EB 80 lower/upper body gasket kit

Comes in 10-pc. packs

# EB 80 BASES FOR VALVES - B

The EB 80 "Bases for valves - B" can be provided with 3 or 4 positions. A version is available with an electrical connection for a single control of each position, suitable for 5/2 monostable solenoid valves (physically impossible to install other valves). Another version comes with two electrical connections for each position and is suitable for all types of valves. The electronics in the base controls the signal coming from both the multi-pole connector and the fieldbus, so the base is the same, regardless of the control system of the island.

The air delivery ducts (ports 2 and 4) are made up of cartridge-type push-in fittings. The cartridge can be replaced, for example when the pipe diameter needs to be changed, by pulling out the clip placed under the base. The air flow ducts (ports 1, 3, 5, X) of the 4-position base are the full flow type. For the 3-position base, either full-flow or one or more sectioned ports can be mounted. With this solution, islands with zones with differentiated pressure can be created.

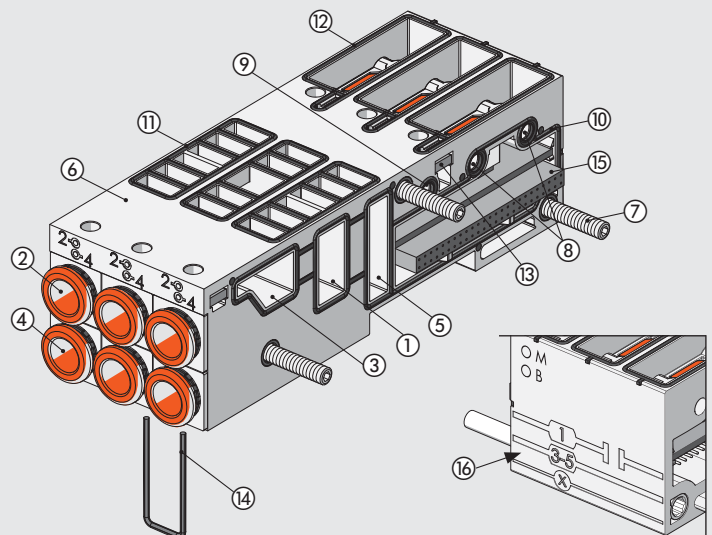


## TECHNICAL DATA

Ambient temperature	°C	-10 to +50
	°F	14 to 122
Fluid		Unlubricated air
Versions		3-position base for controlling 3 solenoid pilots; 3 positions for 6 solenoid pilots; 4 positions for 4 solenoid pilots; 4 positions for 8 solenoid pilots. Pipe fittings Ø 4 (5/32"), 6, 8 (5/16"), 1/4" Ducts 1, 3, 5 and X full flow
Degree of protection		3-position base with 1 sectioned duct; 1, 3 a 5 sectioned; 3 and 5 sectioned (after the first position) IP65

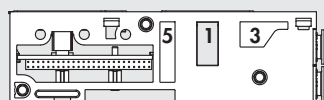
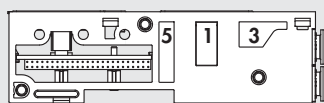
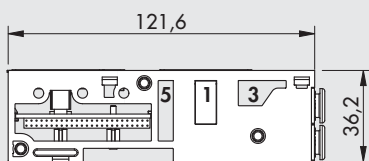
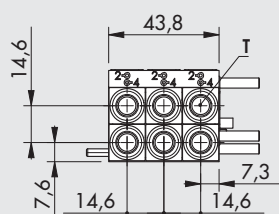
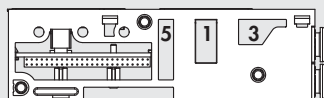
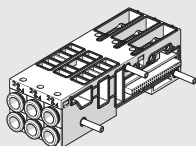
## COMPONENTS

- ① PORT 1 DUCT
- ② PORT 2 CARTRIDGE: push-in fitting
- ③ PORT 3 DUCT
- ④ PORT 4 CARTRIDGE: push-in fitting
- ⑤ PORT 5 DUCT
- ⑥ BODY: technopolymer
- ⑦ TIE ROD: nicked brass and galvanised steel threading
- ⑧ 82/84 DUCT: pilot air relief
- ⑨ X DUCT: pilot control
- ⑩ GASKET BETWEEN BASES: NBR
- ⑪ GASKET FOR THE VALVE: NBR
- ⑫ GASKET FOR IP65: NBR
- ⑬ THREADED PLATE for securing the valves: galvanised steel
- ⑭ CLIP for securing the cartridge: stainless steel
- ⑮ ELECTRONICS
- ⑯ PICTOGRAM: indication of compressed air system layout

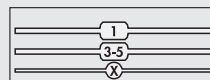


## DIMENSIONS - ORDERING CODES

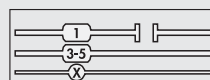
### 3-POSITION BASE FOR VALVES



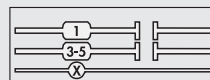
Symbol	T - Pipe fitting	Code		Weight [g]
		3 CONTROLS	6 CONTROLS	
	without cartridges	02282B3031110	02282B3061110	148
	Ø 4 (5/32")	02282B3034440	02282B3064440	210
	Ø 6	02282B3036660	02282B3066660	200
	Ø 8 (5/16")	02282B3038880	02282B3068880	183
	Ø 1/4"	02282B3032220	02282B3062220	200



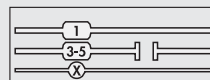
Symbol	T - Pipe fitting	Code		Weight [g]
		3 CONTROLS	6 CONTROLS	
	without cartridges	02282B3131110	02282B3161110	148
	Ø 4 (5/32")	02282B3134440	02282B3164440	210
	Ø 6	02282B3136660	02282B3166660	200
	Ø 8 (5/16")	02282B3138880	02282B3168880	183
	Ø 1/4"	02282B3132220	02282B3162220	200



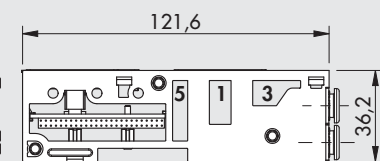
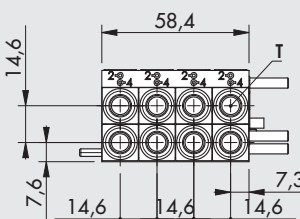
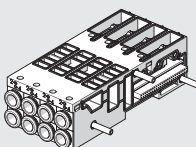
Symbol	T - Pipe fitting	Code		Weight [g]
		3 CONTROLS	6 CONTROLS	
	without cartridges	02282B3231110	02282B3261110	148
	Ø 4 (5/32")	02282B3234440	02282B3264440	210
	Ø 6	02282B3236660	02282B3266660	200
	Ø 8 (5/16")	02282B3238880	02282B3268880	183
	Ø 1/4"	02282B3232220	02282B3262220	200



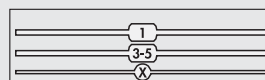
Symbol	T - Pipe fitting	Code		Weight [g]
		3 CONTROLS	6 CONTROLS	
	without cartridges	02282B3331110	02282B3361110	148
	Ø 4 (5/32")	02282B3334440	02282B3364440	210
	Ø 6	02282B3336660	02282B3366660	200
	Ø 8 (5/16")	02282B3338880	02282B3368880	183
	Ø 1/4"	02282B3332220	02282B3362220	200



### 4-POSITION BASE FOR VALVES



Symbol	T - Pipe fitting	Code		Weight [g]
		4 CONTROLS	8 CONTROLS	
	without cartridges	02282B4041111	02282B4081111	196
	Ø 4 (5/32")	02282B4044444	02282B4084444	276
	Ø 6	02282B4046666	02282B4086666	256
	Ø 8 (5/16")	02282B4048888	02282B4088888	244
	Ø 1/4"	02282B4042222	02282B4082222	256



**KEY TO CODES**

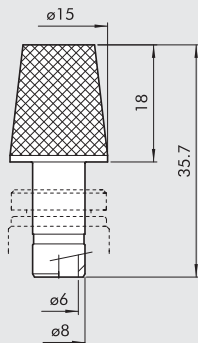
02282	B	3	0	6	8	8	8	0
FAMILY	SUBSYSTEM	NUMBER OF POSITIONS	PORTS IN THE BASE	NUMBER OF SOLENOID PILOT CONTROLS	1 <sup>st</sup> position (from left)	2 <sup>nd</sup> position	3 <sup>rd</sup> position	FITTINGS 4 <sup>th</sup> position
02282 EB 80	B Base for valve	3 3 positions 4 4 positions	0 Full-flow ports ▲ 1 Port 1 sectioned ▲ 2 Ports 1, 3 and 5 sectioned ▲ 3 Ports 3 and 5 sectioned	▲ 3 3 controls ■ 4 4 controls ▲ 6 6 controls ■ 8 8 controls	1 Without cartridges 2 Pipe fitting Ø 1/4" 4 Pipe fitting Ø 4 (5/32") 6 Pipe fitting Ø 6 8 Pipe fitting Ø 8 (5/16")			▲ 0 (for 3-position base) ■ 1 Without cartridges ■ 2 Pipe fitting Ø 1/4" ■ 4 Pipe fitting Ø 4 (5/32") ■ 6 Pipe fitting Ø 6 ■ 8 Pipe fitting Ø 8 (5/16")

▲ For 3-position base only.

■ For 4-position base only.

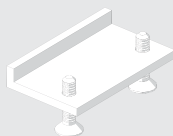
**ACCESSORIES**

**SILENCER FOR FITTING, Ø 8**



Code	Description	Weight [g]
W0970530084	Silencer for fitting, Ø 8	15

**ADDITIONAL FIXING BRACKET TO OMEGA BAR**



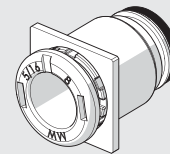
Code	Description	Weight [g]
02282R4001	Additional fixing bar accessory to EB 80 omega bar	5

Individually packed

**N.B.:** to be used to improve the fixing to Omega bars of islands with more than 40 valves. The bracket must be positioned every 20-25 valves.

**SPARE PARTS**

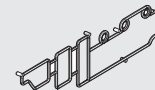
**CARTRIDGE**



Code	Description	Ø
02282R2001	EB 80 Ø 4 base square cartridge kit	4 (5/32")
02282R2002	EB 80 Ø 6 base square cartridge kit	6
02282R2003	EB 80 Ø 8 base square cartridge kit	8 (5/16")
02282R2006	EB 80 1/4 base square cartridge kit	1/4"

Comes in 10-pc. packs

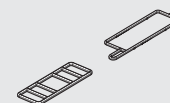
**BASE INTERFACE GASKET**



Code	Description
02282R1000	EB 80 base interface gasket kit

Comes in 10-pc. packs

**BASE-VALVE GASKET**



Code	Description
02282R1002	EB 80 base-valve gasket kit

Comes in 10-pc. packs

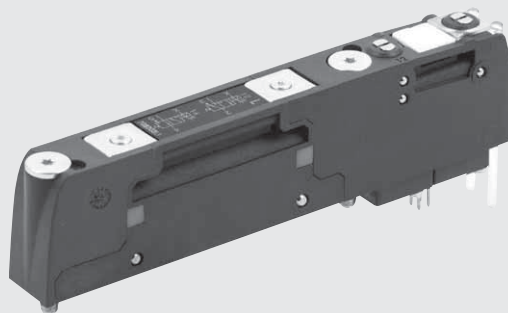
# EB 80 VALVES

The valves in the EB 80 series are designed to ensure high flow using only one small size valve (14 mm wide), without the need of installing a larger size one, to the benefit of component standardisation.

Versions are available with all the main air supply diagrams - from 2/2 to 5/3. The valves are secured to the base with two sturdy M4 captive screws. They come with all the accessories that facilitate their use: manual control, monostable or bistable, LED light, plate with air supply diagram and technical data, white plates available to the customer.

The range also includes:

- High-flow valves which have an innovative system that reaches flow rates that are uncommon for this size of valve.
- Bypass element that makes it possible to boost supply and reliefs or create special pneumatic circuits.
- Circuit shut-off valve (V3V) to connect/disconnect all station valves.
- Dummy valve to plug blank base positions.



TECHNICAL DATA								
Operating pressure			<b>5/2 and 5/3</b>			<b>2/2 and 3/2</b>		
Non-assisted valves	bar		3 to 8			3.5 to 8		
	MPa		0.3 to 0.8			0.35 to 0.8		
	psi		43 to 116			51 to 116		
Assisted valves	bar		Vacuum to 10					
	MPa		Vacuum to 1					
	psi		Vacuum to 145					
Servo pressure	bar		3 to 8			min. (see graph on page B2.51) / max. 8		
	MPa		0.3 to 0.8			min. (see graph on page B2.51) / max. 0.8		
	psi		43 to 116			min. (see graph on page B2.51) / max. 116		
Ambient temperature	°C		-10 to 50 (at 8 bar)					
	°F		14 to 122 (at 8 bar)					
Flow rate at 6.3 bar ΔP 1 bar			<b>Ø 4 (5/32")</b>	<b>Ø 6</b>	<b>Ø 8 (5/16")</b>	<b>Ø 1/4"</b>	<b>Ø 10 **</b>	<b>Ø 3/8" **</b>
	valve 2/2	Nl/min	350	430	500	430	-	-
	valve 3/2	Nl/min	350	600	700	600	1250	1250
	valve 5/2	Nl/min	350	650	800	650	1250 - 1400	1250 - 1400
	valve 5/3	Nl/min	350	460	500	460	1000 - 1250	1000 - 1250
	valve V3V (R)	Nl/min	-	-	-	-	1000	1000
Actuation response time (TRA) / reset response time (TRR) at 6 bar								
	TRA/TRR valves 2/2 and 3/2	ms	14 / 28					
	TRA/TRR valves 5/2 monostable and shut-off valve	ms	12 / 45					
	TRA/TRR valve 5/2 bistable	ms	9 / 11					
	TRA/TRR valve 5/3	ms	15 / 45					
	TRA/TRR valve 3/2 high flow	ms	13 / 36					
Fluid			Unlubricated air					
Air quality required			ISO 8573-1 class 4-7-3					
Supply voltage range	V		12 -10% 24 +30%					
Minimum operating voltage	V		10.8 *					
Maximum operating voltage	V		31.2					
Maximum admissible voltage	V		32 ***					
Power for each valve	W		3 for a few milliseconds. Holding 0.3					
Drive			PNP or NPN					
Solenoid rating			100% ED					
Versions			Manual monostable or bistable control. Various compressed air diagrams					
Degree of protection			IP65					

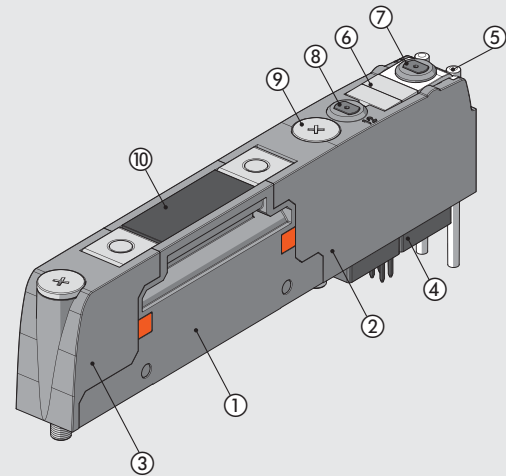
\* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power pack output using the calculations shown on page B2.24

\*\* Using high-flow valves or connected valves - see pages B2.52

\*\*\* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

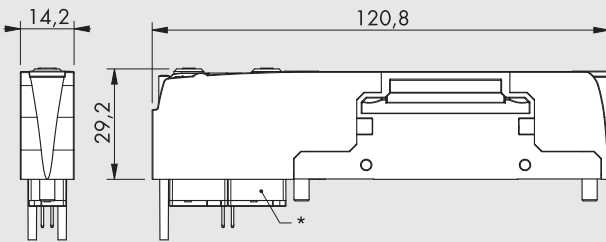
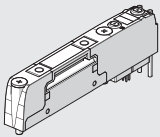
**COMPONENTS**

- ① BODY: technopolymer
- ② CONTROL: technopolymer
- ③ BASE: technopolymer
- ④ SOLENOID PILOT
- ⑤ DISPLAY: LED light and optical tester in technopolymer
- ⑥ TAG: removable
- ⑦ MANUAL CONTROL 14, for port 4: monostable or bistable, in brass
- ⑧ MANUAL CONTROL 12, for port 2: monostable or bistable, in brass
- ⑨ SCREW FOR FIXING TO THE BASE: M4 with PH 1 cross-head, galvanised steel. Tightening torque: 1.2 Nm
- ⑩ TAG: technopolymer with laser-etched wording



**DIMENSIONS - ORDERING CODES**

**EB 80 VALVE**

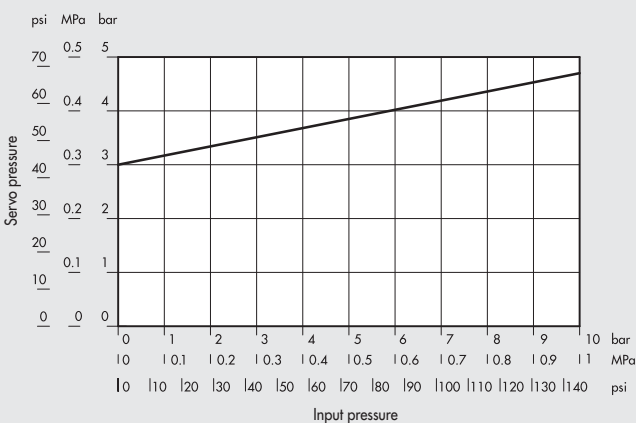


\* The second solenoid pilot is not present in the valves V= 5/2 monostable.

**N.B.:** The valves Z, I, W, L, K, O can be mounted only on bases having 6 or 8 controls.

**SERVO MINIMUM PRESSURE FOR VALVES 2/2 AND 3/2**

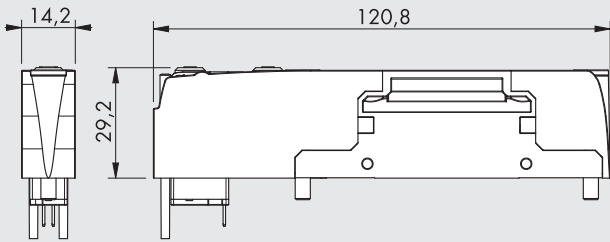
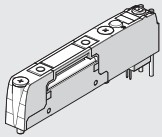
If the island is configured without servo, minimum pressure 3.5 bar



Symbol	Type	Code	Manual control	Weight [g]
Z	2 valves 2/2 NC	708203Z0	monostable	82
		708203Z1	bistable	82
I	2 valves 3/2 NC	708203I0	monostable	82
		708203I1	bistable	82
			valid as 5/3 OC	
W	2 valves 3/2 NO	708203W0	monostable	82
		708203W1	bistable	82
			valid as 5/3 PC	
L	3/2 NC + 3/2 NO	708203L0	monostable	82
		708203L1	bistable	82
V	monostable 5/2	708203V0	monostable	69
		708203V1	bistable	69
K	bistable 5/2	708203K0	monostable	81
		708203K1	bistable	81
O	5/3 CC	708203O0	monostable	82
		708203O1	bistable	82



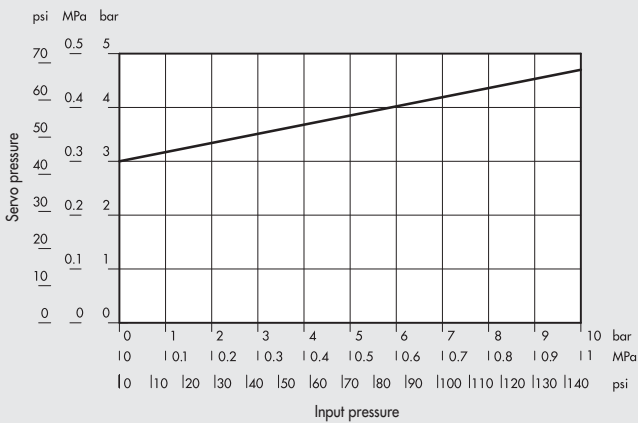
**EB 80 HIGH-FLOW VALVE**



Symbol	Type	Code	Manual control	Weight [g]
G	3/2 NC high flow	708203G0	monostable	69
		708203G1	bistable	69
J	3/2 NO high flow	708203J0	monostable	69
		708203J1	bistable	69

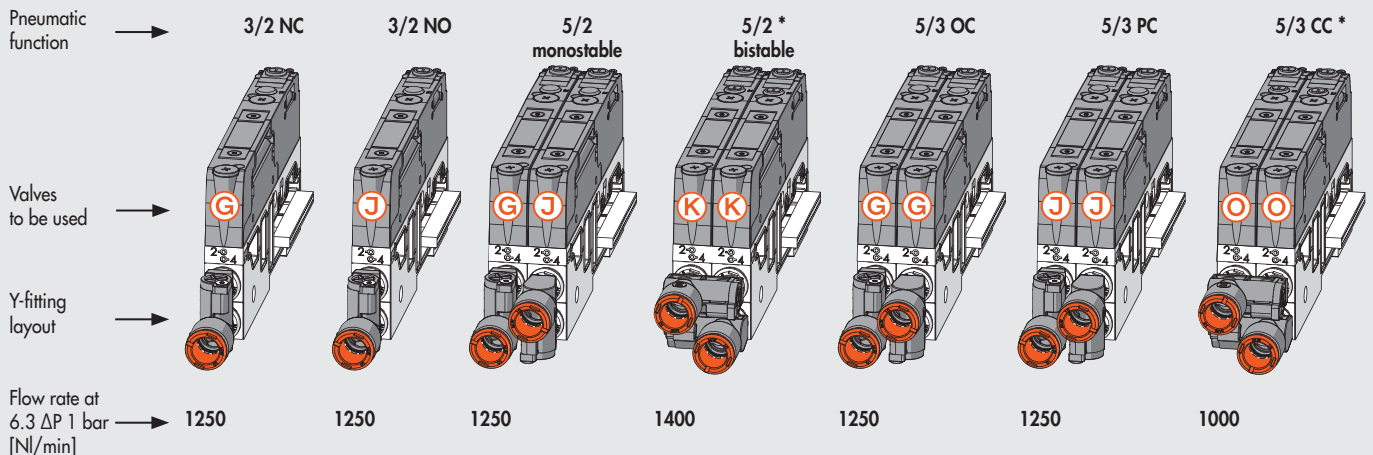
**SERVO MINIMUM PRESSURE**

If the island is configured without servo, minimum pressure 3.5 bar



**HOW TO GET HIGH-FLOW RATE FOR EACH PNEUMATIC FUNCTION**

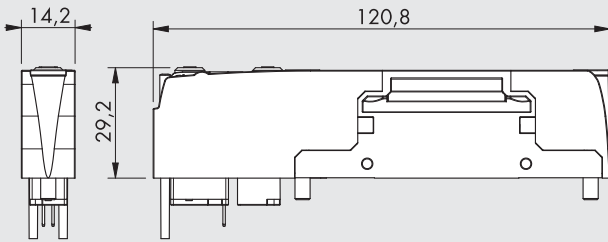
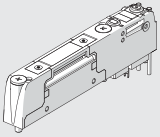
**N.B.** The two cartridges on the base (2 and 4) must fit the Ø 8 mm pipe. Outputs 2 and 4 must be connected one to the other. To do this, you can use the special Y-fitting. When connecting one or more valves using the Y-fitting, the pneumatic system functions must be configured according to the following diagram.



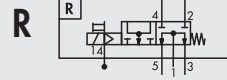
In order to get 5/2 monostable, 5/2 bistable and 5/3 DC high flow, use two parallel valves, by energizing the solenoids simultaneously.

\* The Y-fittings of this valve must be installed longitudinally with one Y-fitting connecting the two outputs (2) and the other the two outputs (4). The solenoid pilots must be operated simultaneously.

**EB 80 SHUT-OFF VALVE (V3V)**

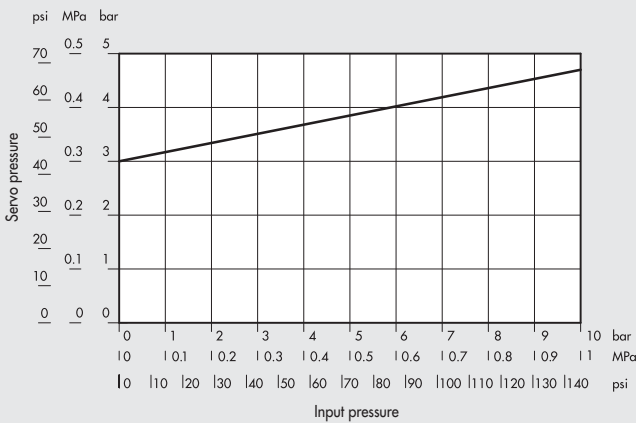


Symbol	Type	Code	Manual control	Weight [g]
R	Shut-off valve	708203R0	monostable	69
		708203R1	bistable	69



**SERVO MINIMUM PRESSURE**

If the island is configured without servo, minimum pressure 3.5 bar



This valve enables the supply/relief of all station valves. The pneumatic supply is delivered via ports 2 and 4 on the base underneath the valve. It is discharged via ports 3 and 5 with general station discharge. Port 1 on pneumatic supply module P must be plugged for the system to operate and slave the island by supplying continuous pressure to port X.

The shut-off valve is designed for the following uses and benefits:

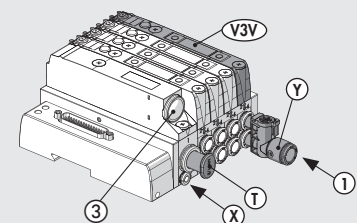
- the valve can be fitted in any position and not necessarily to the left of the others;
- if the station is split into areas with separate channels (1) via intermediate modules M or bases with port 1 selected, the shut-off valve only operates in the area where it is fitted.
- if the capacity of a shut-off valve is not sufficient for its use, two or more can be fitted and operated simultaneously.

**TECHNICAL DATA**

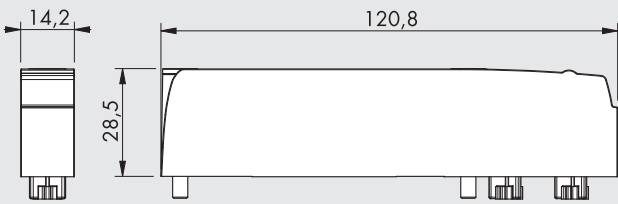
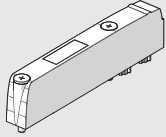
Flow rate at 6.3 bar $\Delta P$ 1 bar	Nl/min	1000 (with 2 $\varnothing$ 8 fittings or a Y fitting, pipe $\varnothing$ 10 mm or 3/8")
Exhaust flow rate at 6.3 bar	Nl/min	660
Actuation response time (TRA) / reset response time (TRR) at 6 bar	ms	12/45
Servo pressure		See technical data 3/2 valves (page B2.50)

**SHUT-OFF VALVE DIAGRAM**

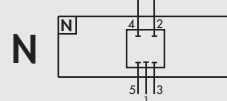
- V3V** Shut-off valve, can be fitted in any position
- 1** Pneumatic supply
- 3** Relief
- Y** Y-fitting with black bush (page B2.55)
- T** Plug port 1 of pneumatic supply P module
- X** Always use the pneumatic supply servo version



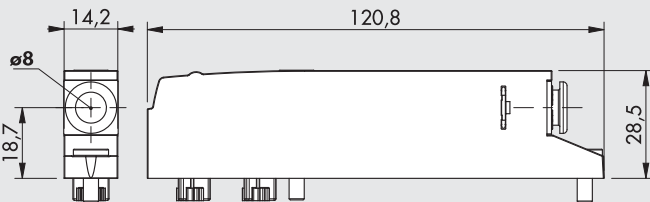
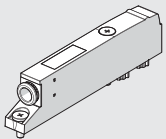
DUMMY VALVE (PLUG)



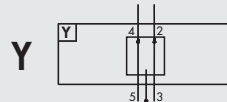
Symbol	Description	Code	Weight [g]
N	Dummy valve	708203N0	47



BYPASS



Symbol	Description	Code	Weight [g]
Y	Bypass Ø8	708203Y8	50



N.B.: Maximum pressure in the ports 2 and 4: 8 bar

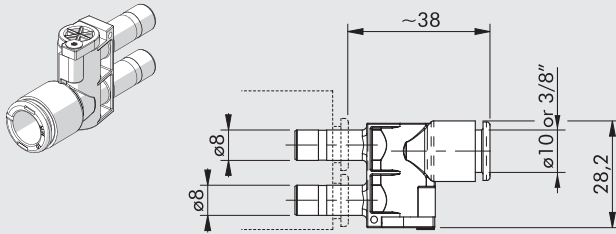
Connects port 3 of the base to port 2 and port 5 to port 4.  
The fitting present is connected to port 1.

KEY TO CODES

7082	03	V	0
FAMILY	TYPE	SCHEMA	MANUAL CONTROL
7082 EB 80	03 Electric, servo-assisted	Z 2 valves 2/2NC I 2 valves 3/2 NC W 2 valves 3/2 NO L 3/2 NC + 3/2 NO V 5/2 monostable K 5/2 bistable O 5/3 CC G 3/2 NC high flow J 3/2 NO high flow R Shut-off valve Y Bypass N Dummy valve (plug)	0 Monostable or for dummy valve 1 Bistable 8 For bypass only

## ACCESSORIES

### Y-FITTING



Code	Description	Release bushing color
02282R2Y04	Y-fitting for EB 80 Ø 8 (5/16") - Ø 10	Orange
02282R2Y14	Y-fitting for EB 80 Ø 8 (5/16") - Ø 10	Black
02282R2Y07	Y-fitting for EB 80 Ø 8 (5/16") - Ø 3/8"	Orange
02282R2Y17	Y-fitting for EB 80 Ø 8 (5/16") - Ø 3/8"	Black

### SPARE PARTS

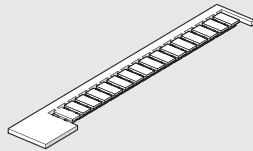
#### BASE FIXING SCREW



Code	Description
02282R3000	Kit of screws for fixing the EB 80 base

Comes in 10-pc. packs

#### IDENTIFICATION PLATE KIT



Code	Description
0226107000	Identification plate kit

Comes in 16-pc. packs

#### NOTES

# EB 80 INTERMEDIATE SUPPORT - M

The "Intermediate modules - M" perform a series of functions.

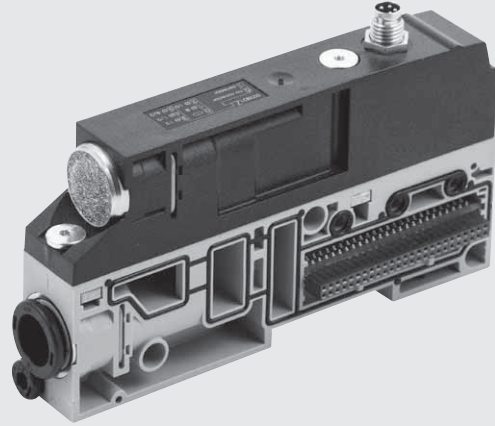
They can help increase the flow rate available in an EB 80 island, when various valves are used at the same time. They can be used to divide an island in areas of different pressures.

They can also be used as additional electrical power supply, when there is a high number of solenoid pilots actuated simultaneously; or to electrically separate and cut out a part of the island, in the event of an emergency, for example.

Intermediate modules can be placed in any position in the EB 80 island. Several versions are available, with fittings for pipes of different diameter. Relief ports 3 and 5 can be either connected using a silencer or conveyed via a fitting.

A version with separate ports 3 and 5 is also available. This feature is useful in versions with pilot servo-assistance to power the valves from ports 3 and 5, at different pressures, from vacuum to 8 bar.

The lower body of the intermediate plate comes with different air flow ducts: with full flow ports or one or more closed ports.



## TECHNICAL DATA

Operating pressure	Vacuum to 10 bar / Vacuum to 1 MPa / Vacuum to 145 psi			
Ambient temperature	-10 to + 50 °C / 14 to 122 °F			
Flow rate at 6.3 bar ΔP 1 bar	Ø 8 (5/16")	Ø 10	Ø 12	Ø 1/2"
Feeding (port 1)	Nl/min	1800	2800	3500
Exhaust with fitting (ports 3 and 5)	Nl/min	2000	3200	4400
Separate exhausts Ø 8	Nl/min	1800 x 2	-	-
Flow rate at 6.3 bar free exhaust				
Exhaust with fitting (ports 3 and 5)	Nl/min	2700	3900	6100
Silenced exhaust	Nl/min	3600		6100
Exhaust with fitting Ø 12 and silencer W0970530086	Nl/min	6000		
Separate exhausts Ø 8 (N.B.: Pmax 8 bar)	Nl/min	2700 x 2	-	-
Fluid	Unlubricated air			
Additional electrical power supply	M8 4-pin connector *			
Voltage range	V 12 to 31.2			
Maximum number of solenoid pilots that can be actuated simultaneously from the additional electrical connection:				
at 24VDC	With 100% simultaneity: 48 / With 60% simultaneity: 80			
at 12VDC	With 100% simultaneity: 32 / With 60% simultaneity: 64			
Versions	Pipe fittings Ø 8, 10, 12, 1/2"; Silenced relief, conveyed relief, ports 3 and 5 separate Full-flow ports in the base, 1 closed, 1, 3 and 5 closed, 3 and 5 closed, 1, 3, 5 and X closed With or without additional electrical power supply IP65 (with connectors connected or plugged if not used)			
Degree of protection	IP65 (with connectors connected or plugged if not used)			

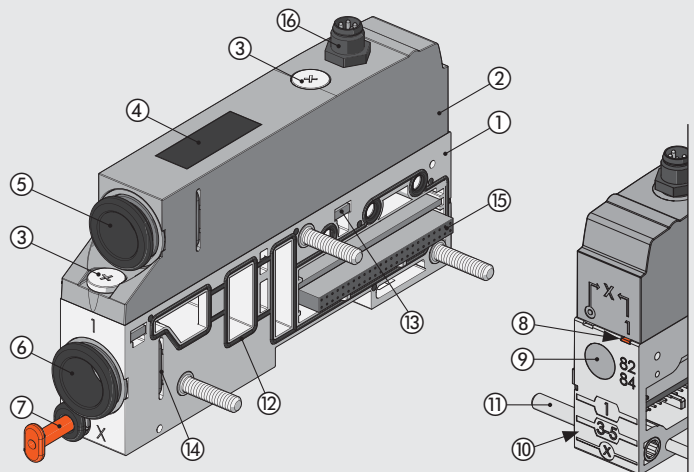
**IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

\* If electric power is not supplied: the red power LED light comes on and the LEDs at the base keep flashing (voltage out of range);

in the version with multi-pin electrical connection, the "OUT" fault signal is triggered; in the version with fieldbus, a software message is sent.

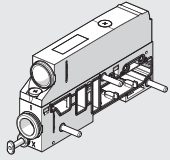
## COMPONENTS

- ① LOWER PART BODY: technopolymer
- ② UPPER PART BODY: technopolymer
- ③ SCREWS for fixing between the bodies: galvanised steel  
(Tightening torque: 1.2 Nm)
- ④ TAG with laser-etched wording: technopolymer
- ⑤ AIR RELIEF: silencer or pipe fitting
- ⑥ POWER SUPPLY: pipe fitting
- ⑦ PILOTING (X): pipe fitting Ø 4
- ⑧ INDICATOR: indicating whether power supply to pilots is separate or not
- ⑨ PILOT RELIEF: silencer in HDPE
- ⑩ PICTOGRAM: indication of compressed air system layout
- ⑪ TIE RODS: nickel-plated steel
- ⑫ GASKET: NBR
- ⑬ THREADED PLATE: galvanised steel
- ⑭ CARTRIDGE FIXING CLIP: stainless steel
- ⑮ ELECTRONIC BOARD
- ⑯ M8 CONNECTOR: only for version with additional electrical power supply

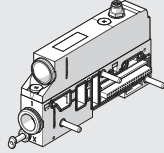


## DIMENSIONS - ORDERING CODES

### INTERMEDIATE MODULE - SILENCED RELIEF

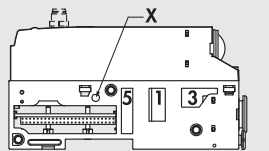
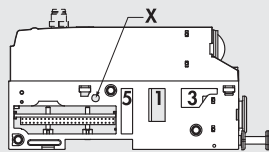
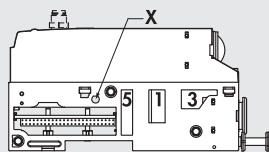
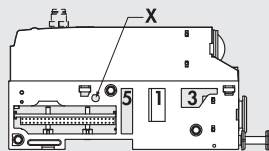
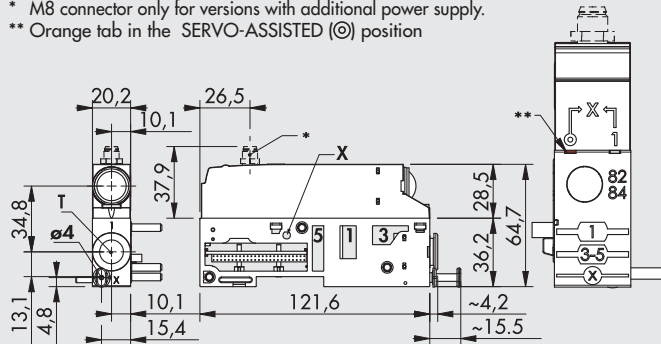


WITHOUT additional electrical power supply



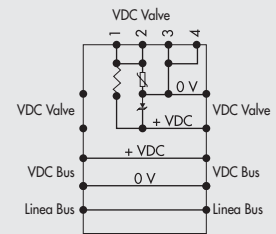
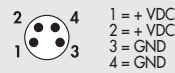
WITH additional electric power supply

\* M8 connector only for versions with additional power supply.  
 \*\* Orange tab in the SERVO-ASSISTED (⊙) position



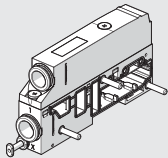
### WIRING DIAGRAM INTERMEDIATE MODULE - M, WITH ADDITIONAL POWER SUPPLY

M8 male connector

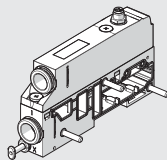


Symbol	T Pipe fitting	Code		Weight [g]
		Additional electric power supply WITHOUT	WITH	
<b>Full-flow ports</b> 	Ø 8 (5/16")	02282M100Z00	02282M101Z01	168
	Ø 10	02282M200Z00	02282M201Z01	164
	Ø 12	02282M300Z00	02282M301Z01	160
	Ø 1/2"	02282M500Z00	02282M501Z01	160
<b>Port 1 closed</b> 	Ø 8 (5/16")	02282M110Z00	02282M111Z01	168
	Ø 10	02282M210Z00	02282M211Z01	164
	Ø 12	02282M310Z00	02282M311Z01	160
	Ø 1/2"	02282M510Z00	02282M511Z01	160
<b>Ports 1, 3 and 5 closed</b> 	Ø 8 (5/16")	02282M120Z00	02282M121Z01	168
	Ø 10	02282M220Z00	02282M221Z01	164
	Ø 12	02282M320Z00	02282M321Z01	160
	Ø 1/2"	02282M520Z00	02282M521Z01	160
<b>Ports 3 and 5 closed</b> 	Ø 8 (5/16")	02282M130Z00	02282M131Z01	168
	Ø 10	02282M230Z00	02282M231Z01	164
	Ø 12	02282M330Z00	02282M331Z01	160
	Ø 1/2"	02282M530Z00	02282M531Z01	160
<b>Ports 1, 3, 5 and X closed</b> 	Ø 8 (5/16")	02282M140Z00	02282M141Z01	168
	Ø 10	02282M240Z00	02282M241Z01	164
	Ø 12	02282M340Z00	02282M341Z01	160
	Ø 1/2"	02282M540Z00	02282M541Z01	160

**INTERMEDIATE MODULE - CONVEYED RELIEF**

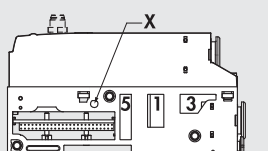
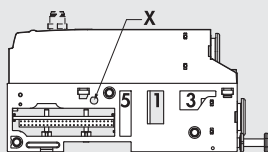
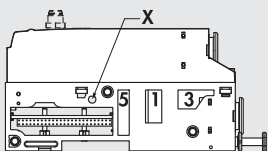
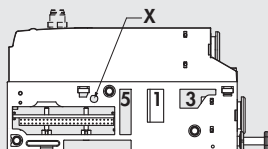
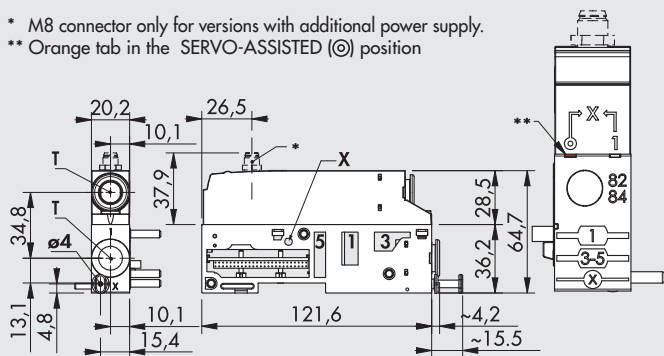


WITHOUT additional electrical power supply



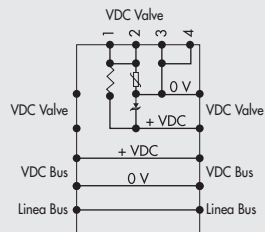
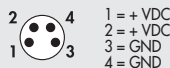
WITH additional electric power supply

\* M8 connector only for versions with additional power supply.  
 \*\* Orange tab in the SERVO-ASSISTED (Ⓢ) position



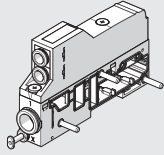
**WIRING DIAGRAM NTERMEDIATE MODULE - M, WITH ADDITIONAL POWER SUPPLY**

M8 male connector

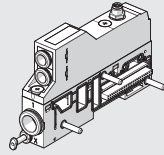


Symbol	T Pipe fitting	Code		Weigh [g]
		Additional electric power supply WITHOUT	WITH	
	Ø 8 (5/16")	02282M100Z10	02282M101Z11	168
	Ø 10	02282M200Z20	02282M201Z21	164
	Ø 12	02282M300Z30	02282M301Z31	160
	Ø 1/2"	02282M500Z50	02282M501Z51	160
	Ø 8 (5/16")	02282M110Z10	02282M111Z11	168
	Ø 10	02282M210Z20	02282M211Z21	164
	Ø 12	02282M310Z30	02282M311Z31	160
	Ø 1/2"	02282M510Z50	02282M511Z51	160
	Ø 8 (5/16")	02282M120Z10	02282M121Z11	168
	Ø 10	02282M220Z20	02282M221Z21	164
	Ø 12	02282M320Z30	02282M321Z31	160
	Ø 1/2"	02282M520Z50	02282M521Z51	160
	Ø 8 (5/16")	02282M130Z10	02282M131Z11	168
	Ø 10	02282M230Z20	02282M231Z21	164
	Ø 12	02282M330Z30	02282M331Z31	160
	Ø 1/2"	02282M530Z50	02282M531Z51	160
	Ø 8 (5/16")	02282M140Z10	02282M141Z11	168
	Ø 10	02282M240Z20	02282M241Z21	164
	Ø 12	02282M340Z30	02282M341Z31	160
	Ø 1/2"	02282M540Z50	02282M541Z51	160

**INTERMEDIATE MODULE - SEPARATE RELIEF**

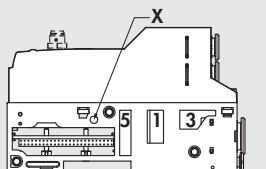
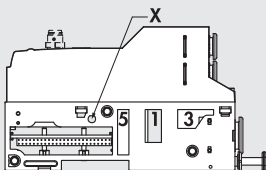
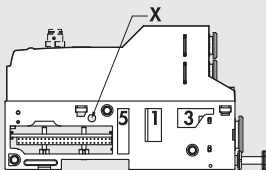
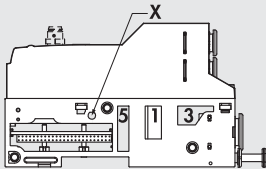
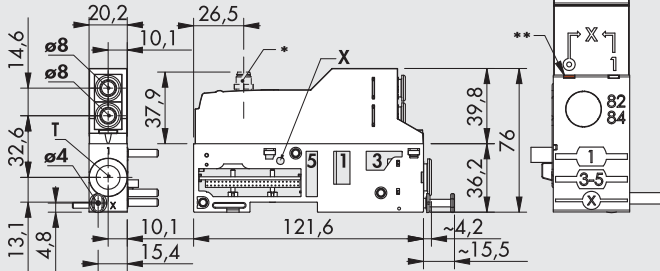


WITHOUT additional electrical power supply



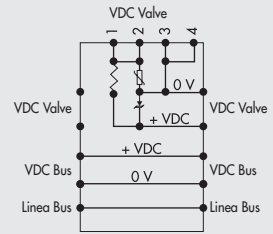
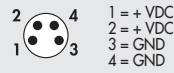
WITH additional electrical power supply

\* M8 connector only for versions with additional power supply.  
 \*\* Orange tab in the SERVO-ASSISTED (⊙) position



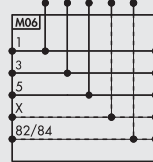
**WIRING DIAGRAM NTERMEDIATE MODULE - M, WITH ADDITIONAL POWER SUPPLY**

M8 male connector

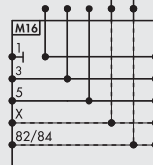


**N.B.:** Maximum pressure in the ports 3 and 5: 8 bar

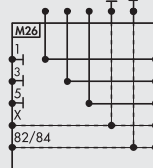
Symbol	T Pipe fitting	Code		Weight [g]
		Additional electric power supply WITHOUT	WITH	
Full-flow ports	Ø 8 (5/16")	02282M100Z60	02282M101Z61	179
	Ø 10	02282M200Z60	02282M201Z61	175
	Ø 12	02282M300Z60	02282M301Z61	171
	Ø 1/2"	02282M500Z60	02282M501Z61	171



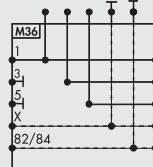
Port 1 closed	Ø 8 (5/16")	02282M110Z60	02282M111Z61	179
	Ø 10	02282M210Z60	02282M211Z61	175
	Ø 12	02282M310Z60	02282M311Z61	171
	Ø 1/2"	02282M510Z60	02282M511Z61	171



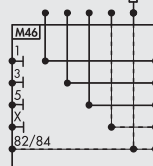
Ports 1, 3 and 5 closed	Ø 8 (5/16")	02282M120Z60	02282M121Z61	179
	Ø 10	02282M220Z60	02282M221Z61	175
	Ø 12	02282M320Z60	02282M321Z61	171
	Ø 1/2"	02282M520Z60	02282M521Z61	171



Ports 3 and 5 closed	Ø 8 (5/16")	02282M130Z60	02282M131Z61	179
	Ø 10	02282M230Z60	02282M231Z61	175
	Ø 12	02282M330Z60	02282M331Z61	171
	Ø 1/2"	02282M530Z60	02282M531Z61	171



Ports 1, 3, 5 and X closed	Ø 8 (5/16")	02282M140Z60	02282M141Z61	179
	Ø 10	02282M240Z60	02282M241Z61	175
	Ø 12	02282M340Z60	02282M341Z61	171
	Ø 1/2"	02282M540Z60	02282M541Z61	171





**KEY TO CODES**

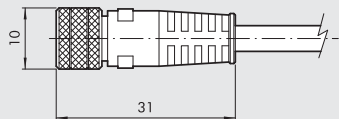
02282 FAMILY	M SUBSYSTEM	3 PORT FITTING 1	0 PORTS IN THE BASE	0 ADDITIONAL ELECTRICAL POWER SUPPLY	Z UPPER PART	3 PORTS 3 AND 5 FITTING	0 ELECTRICAL CONNECTOR
02282 EB 80	M Intermediate	1 Pipe fitting Ø 8 (5/16") 2 Pipe fitting Ø 10 3 Pipe fitting Ø 12 5 Pipe fitting Ø 1/2"	0 Full-flow ports 1 Port 1 closed 2 Ports 1, 3 and 5 closed 3 Ports 3 and 5 closed 4 Ports 1, 3, 5 and X closed	■ 0 Without ● 1 With	Z The upper part is present	0 Silencer ▲ 1 Pipe fitting Ø 8 (5/16") ▲ 2 Pipe fitting Ø 10 ▲ 3 Pipe fitting Ø 12 ▲ 5 Pipe fitting Ø 1/2" 6 2 pipes fitting Ø 8 (5/16") (one for port 3, one for port 5)	■ 0 Without ● 1 With

- ▲ For ports 3/5, use the same Ø pipe as port 1.
- Same number for both positions.
- Same number for both positions.

**ACCESSORIES**

**M8 CONNECTOR FOR POWER SUPPLY**

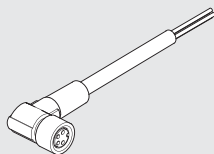
Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 3 m
0240009037	M8 4-pin female connector for power supply, cable L = 5 m
0240009058	M8 4-pin female connector for power supply, cable L = 10 m
0240009059	M8 4-pin female connector for power supply, cable L = 15 m

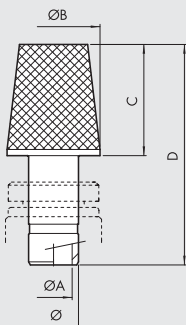
**M8 90° CONNECTOR FOR POWER SUPPLY**

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240009103	M8 4-pin connector - female, 90° angle L = 5 m

**SILENCER FOR FITTING**

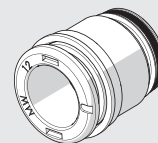


Ø	Ø A	Ø B	C	D
8	6	15	18	35.7
12	10	18.8	29	51.5

Code	Description	Weight [g]
W0970530084	Silencer for fitting, Ø 8	15
W0970530086	Silencer for fitting, Ø 12	24

**SPARE PARTS**

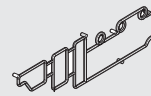
**CARTRIDGE**



Code	Description	Ø
02282R2110	EB 80 silencer cartridge kit	silencer
02282R2113	EB 80 Ø 8 power supply round cartridge kit	8 (5/16")
02282R2114	EB 80 Ø 10 power supply round cartridge kit	10
02282R2115	EB 80 Ø 12 power supply round cartridge kit	12
02282R2118	EB 80 Ø 1/2 power supply round cartridge kit	1/2"

Comes in 10-pc. packs

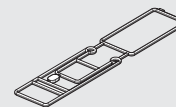
**BASE INTERFACE GASKET**



Code	Description
02282R1000	EB 80 base interface gasket kit

Comes in 10-pc. packs

**LOWER /UPPER BODY GASKET**

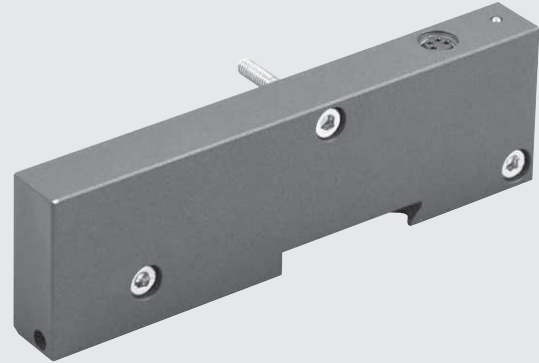


Code	Description
02282R1001	EB 80 lower/upper body gasket kit

Comes in 10-pc. packs

# EB 80 CLOSED END-PLATE - C

The "Closed end plate - C" is the last element of each EB 80 system.  
A version for islands with multi-pole connector is available.  
One for islands with fieldbus, containing a small electronic board; one for connection to other additional EB 80 islands (only for systems with fieldbus).  
The end plate houses the system for mechanically fixing the island to external supports.

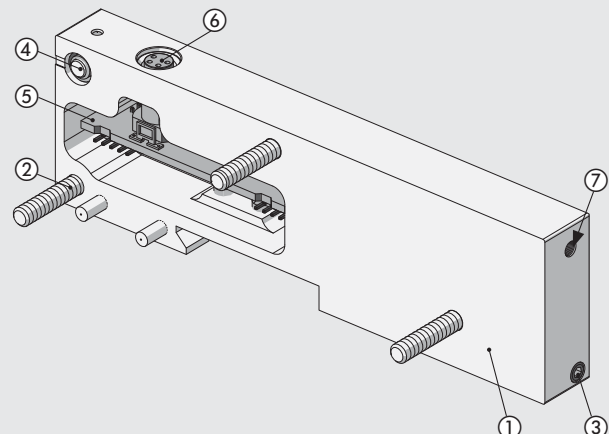


## TECHNICAL DATA

Ambient temperature	°C	-10 to +50
	°F	14 to 122
Versions	For islands with multi-pole connection. For island with fieldbus. For connection to additional islands.	
Degree of protection	IP65 (with connectors connected or plugged if not used)	
Notes	All valve units (including multi-pole versions) require earthing protection. Use M4 thread on the end plate with braided cable code 02282R6000 provided or, when fixing the unit onto a DIN bar, connect the bar to earthing.	

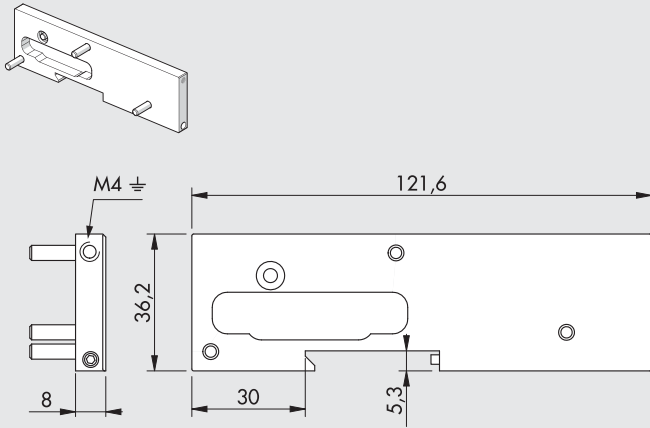
## COMPONENTS

- ① BODY: painted metal
- ② FIXING SCREW: TCE M4x20 galvanised steel
- ③ GRUB SCREW securing the DIN bar or bracket: galvanized steel
- ④ RELIEF VALVE: safety in case of internal pressure increase due to temperature or losses
- ⑤ ELECTRONIC BOARD: none in the Closed end plate for islands with multi-pole connector
- ⑥ M8 CONNECTOR: only in the Closed end plate for connection with additional islands
- ⑦ GROUNDING  $\perp$



## DIMENSIONS - ORDERING CODES

### CLOSED END PLATE FOR ISLANDS WITH MULTI-POLE CONNECTOR

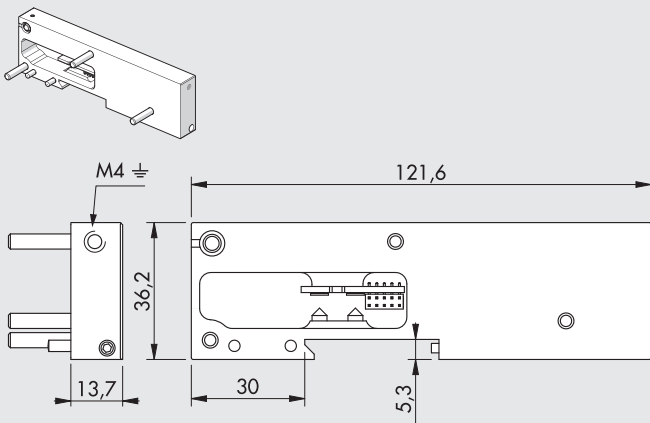


Symbol



Code	Description	Weight [g]
02282C1	Closed end-plate for islands with multi-pole connector	92

### CLOSED END-PLATE FOR ISLANDS WITH FIELDBUS



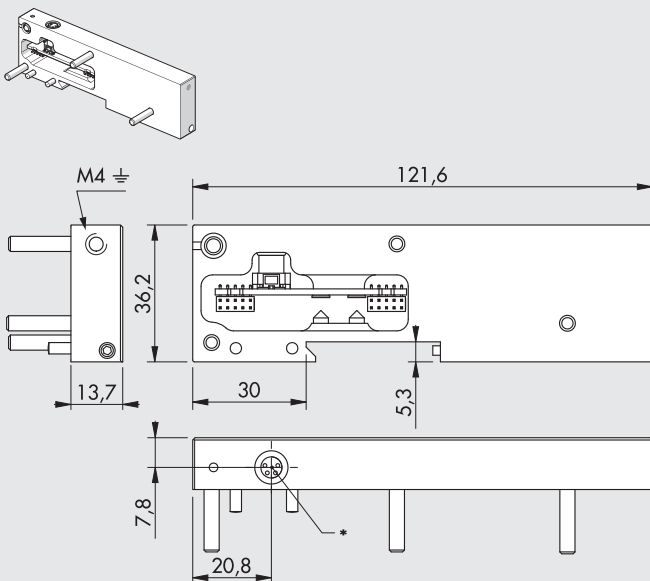
Symbol



Code	Description	Weight [g]
02282C2	Closed end-plate for islands with fieldbus	148

Note: also usable for islands with multi-pole connector

### CLOSED END PLATE FOR ELECTRICAL CONNECTION OF ISLANDS WITH FIELDBUS TO ADDITIONAL ISLANDS



Symbol



Code	Description	Weight [g]
02282C3	Closed end-plate for electrical connection to additional islands	148

Note: if you do not connect additional island you must mount the M8 end connector

\* M8 connector for connection to additional islands.

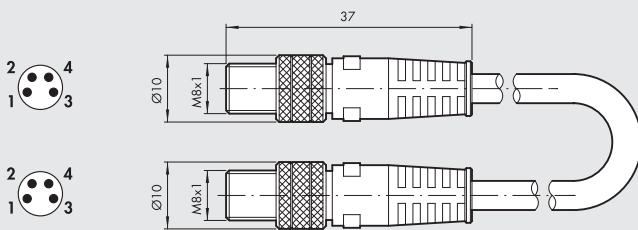
**N.B.:** The system does not work until the connector is connected to the "Additional electrical connection - E" module.

**KEY TO CODES**

02282	C	1
<b>FAMILY</b>	<b>SUBSYSTEM</b>	<b>TYPE</b>
02282 EB 80	C Closed end-plate	<b>1</b> For islands with multi-pole connection <b>2</b> For islands with fieldbus <b>3</b> For connection to additional islands

**ACCESSORIES**

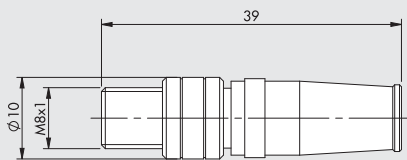
**M8 CONNECTOR WITH CABLE FOR CONNECTION BETWEEN EB 80 ISLANDS**



Code	Description	Weight [g]
0240010201	M8-M8 4-pin male shielded cable L = 1 m	45
0240010205	M8-M8 4-pin male shielded cable L = 5 m	185
0240010210	M8-M8 4-pin male shielded cable L = 10 m	330
0240010215	M8-M8 4-pin male shielded cable L = 15 m	475
0240010220	M8-M8 4-pin male shielded cable L = 20 m	620

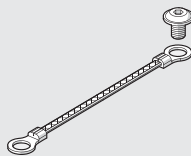
**N.B.:** For correct operation of the entire EB 80 system, use M8-M8 pre-wired, twisted and shielded cables only.

**M8 END CONNECTOR FOR EB 80 VALVES**



Code	Description
02282R5000	M8 end connector for EB 80 valves

**BRAIDED EARTH CABLE**



Code	Description
02282R6000	Braided earth cable

**NOTES**

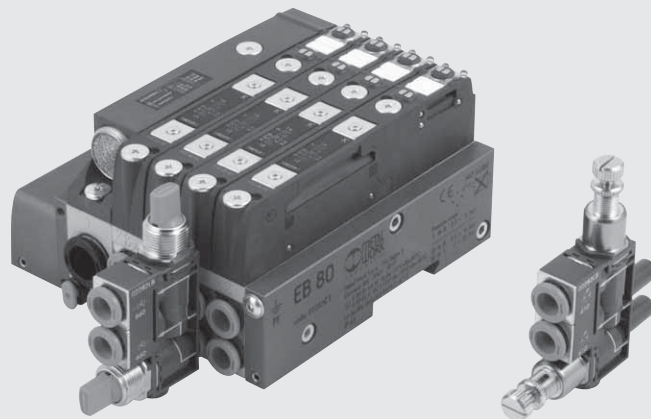
# EB 80 MULTI-FUNCTION MODULE

The multi-function module is an important extension of the possibilities offered by the EB 80 systems to manage the performance of actuators controlled by individual solenoid valves. For each port, it can regulate the pressure and the flow rate, provide manual sectioning, display the presence of pressurized air and much more besides.

In line with the modular EB 80 configuration, the multi-function module is designed to ensure maximum flexibility: it can be installed at any time; the function connected to port 2 may differ from that connected to port 4 (e.g. regulating the pressure at output 2 and the air flow at port 4); the modules can be mounted in series one after the other; the cartridge fittings for the pipes can be replaced at any time and are the same as those used in the EB 80 valve bases.

Given that the air input pipes have a  $\varnothing 8$  mm, the multi-function module must be inserted in the EB 80 bases with cartridges suitable for  $\varnothing 8$  fittings; but if the base to which you want to connect has a cartridge of a different diameter, you only need to buy a multi-function fitting with  $\varnothing 8$  cartridges and replace those of the base with those of the module.

The code and the pneumatic diagram are laser etched on the technopolymer body.



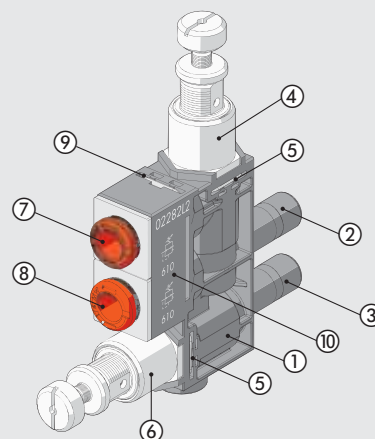
## TECHNICAL DATA

Operating pressure	bar	10
	MPa	1
	psi	145
Temperature range	°C	-10 to + 50
	°F	14 to 122
Fluid		Unlubricated air
Air quality required		ISO 8573-1 class 4-7-3
Functions		Unidirectional flow regulator, bidirectional flow regulator, pressure regulator, quick-relief valve, check valve, 2- or 3-way shut-off valve, pneumatic valve, pressure display, calibrated choke.
Air inlet		Tubes for $\varnothing 8$ mm fittings
Air delivery		Cartridge fittings for pipes $\varnothing 4$ (5/32"), $\varnothing 6$ , $\varnothing 1/4"$ , $\varnothing 8$ (5/16")
Recommended pipe		Rilsan PA 11 - Nylon 6 - Polyamide 12 - Polypropylene

**N.B.:** For more specific technical data, please refer to the chapters for individual function-modules

## COMPONENTS

- ① BODY: technopolymer
- ② TUBE to be inserted into port 2 of the EB 80 base
- ③ TUBE to be inserted into port 4 of the EB 80 base
- ④ PNEUMATIC FUNCTION relating to port 2
- ⑤ CLIP for the pneumatic function, steel
- ⑥ PNEUMATIC FUNCTION relating to port 4
- ⑦ Cartridge FITTING for port 2
- ⑧ Cartridge FITTING for port 4
- ⑨ CLIP for the cartridges
- ⑩ CODE AND DIAGRAM, laser etched

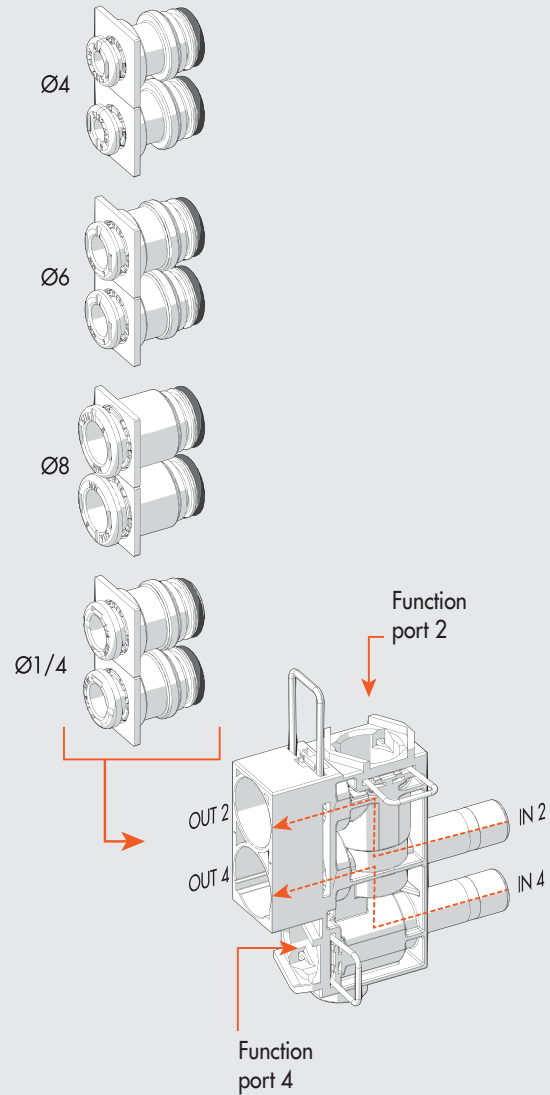


**EXPLODED FUNCTION DIAGRAM**

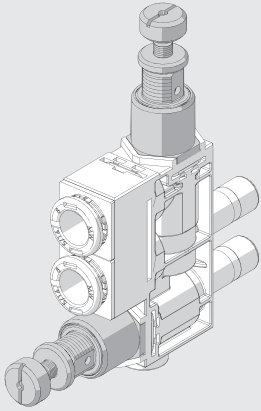
PNV	REG	LAM	V2V	V3V
3-way pneumatic valve	Pressure regulator	Pressure indicator	Shut-off valve 2-way	Shut-off valve 3-way
Code 670	Code 610	Code 680 / 682	Code 650	Code 660
See page B2.68	See page B2.69	See page B2.70	See page B2.71	See page B2.71

RFL		RFF	
Flow regulator unidirectional	Flow regulator bidirectional	Calibrated choke unidirectional type V	Calibrated choke bidirectional type B
Code 410	Code 411	Code 7_ _	Code 8_ _
See page B2.72		See page B2.74	

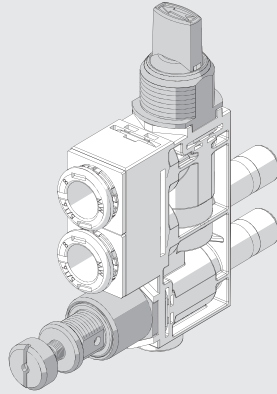
VSRC	VSRS	VSRR	P2V	VNR	NF
Quick-exhaust valve conveyed	Quick-exhaust valve silenced	Quick-exhaust valve regulated	Unidirectional 2-way pneumatic valve	Check valve	No function
Code 630	Code 631	Code 632	Code 671	Code 640	Code 000
See page B2.75	See page B2.75	See page B2.76	See page B2.78	See page B2.79	See page B2.80



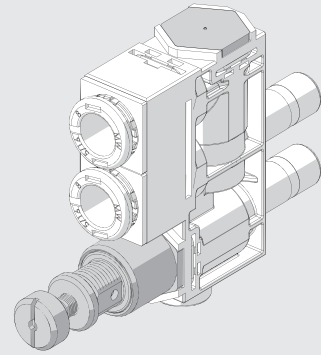
EXAMPLES OF MODULARITY



SAME FUNCTIONS ON PORTS 2 AND 4

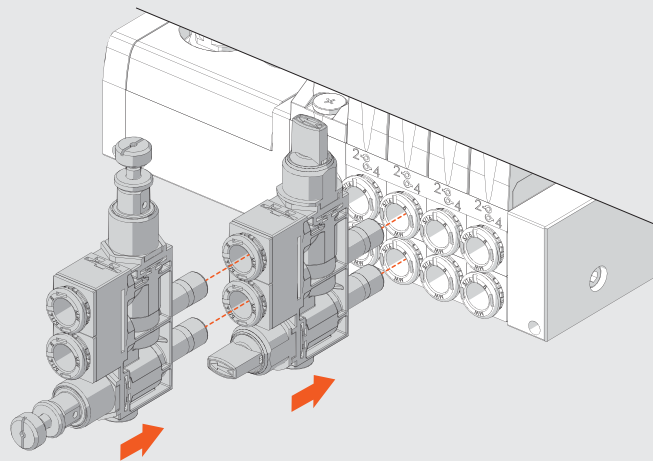


FUNCTION ON PORT 2 DIFFERENT FROM THAT ON PORT 4



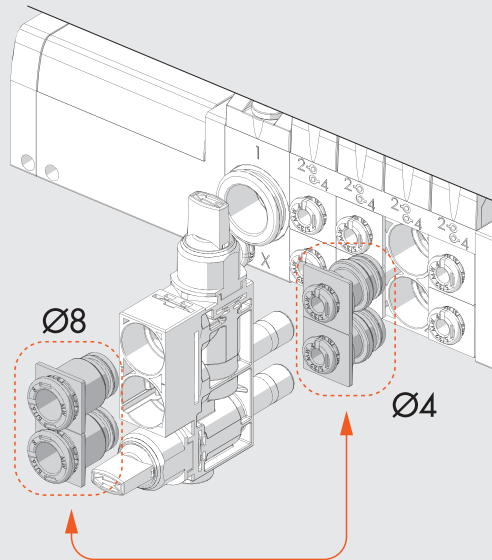
FUNCTION ON ONE PORT ONLY

SERIES ASSEMBLING



REPLACING THE CARTRIDGES

When fittings for pipes other than Ø 8 pipes are mounted on the base, choose a multi-function module with Ø 8 fittings and invert them with those of the base.



## KEY TO CODES

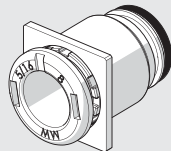
02282	L	6	610	410
FAMILY	SUBSYSTEM	FITTINGS	FUNCTION PORT 2 (Top)	FUNCTION PORT 4 (Bottom)
02282 EB 80	L Multi-function module	2 Pipe fitting $\varnothing$ 1/4" 4 Pipe fitting $\varnothing$ 4 (5/32") 6 Pipe fitting $\varnothing$ 6 8 Pipe fitting $\varnothing$ 8 (5/16")	000 NF - No function 410 RFL - Flow regulator unidirectional 411 RFL - Flow regulator bidirectional 610 REG - Pressure regulator 630 VSRC - Quick-exhaust valve, conveyed 631 VSRS - Quick-exhaust valve, silenced 632 VSRR - Quick-exhaust valve, regulated 640 VNR - Check valve 650 V2V - 2-way shut-off valve 660 V3V - 3-way shut-off valve 670 PNV - 3-way pneumatic valve 671 P2V - Unidirectional 2-way pneumatic valve 680 LAM - Orange pressure indicator 682 LAM - Green pressure indicator 7_ _* RFF - Calibrated choke unidirectional - type V 8_ _* RFF - Calibrated choke bidirectional - type B	000 NF - No function 410 RFL - Flow regulator unidirectional 411 RFL - Flow regulator bidirectional 610 REG - Pressure regulator 630 VSRC - Quick-exhaust valve, conveyed 631 VSRS - Quick-exhaust valve, silenced 632 VSRR - Quick-exhaust valve, regulated 640 VNR - Check valve 650 V2V - 2-way shut-off valve 660 V3V - 3-way shut-off valve 670 PNV - 3-way pneumatic valve 671 P2V - Unidirectional 2-way pneumatic valve 680 LAM - Orange pressure indicator 682 LAM - Green pressure indicator 7_ _* RFF - Calibrated choke unidirectional - type V 8_ _* RFF - Calibrated choke bidirectional - type B

\* The last two digits indicate the narrowing  $\varnothing$ .

02 = $\varnothing$ 0.2 mm	05 = $\varnothing$ 0.5 mm	10 = $\varnothing$ 1.0 mm
03 = $\varnothing$ 0.3 mm	06 = $\varnothing$ 0.6 mm	13 = $\varnothing$ 1.3 mm
04 = $\varnothing$ 0.4 mm	08 = $\varnothing$ 0.8 mm	15 = $\varnothing$ 1.5 mm

## SPARE PARTS

## CARTRIDGE



Code	Description	$\varnothing$
02282R2001	EB 80 $\varnothing$ 4 base square cartridge kit	4 (5/32")
02282R2002	EB 80 $\varnothing$ 6 base square cartridge kit	6
02282R2003	EB 80 $\varnothing$ 8 base square cartridge kit	8 (5/16")
02282R2006	EB 80 $\varnothing$ 1/4 base square cartridge kit	1/4"

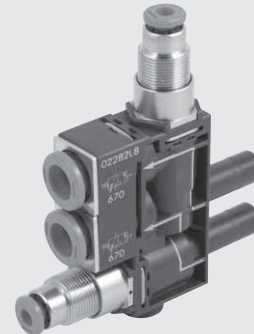
Comes in 10-pc. packs

## NOTES



# EB 80 3-WAY PNEUMATIC VALVE – PNV

It is a normally closed 3/2 valve driven pneumatically via a  $\varnothing 4$  pipe. It intercepts the air flow leaving the EB 80 valve. If the PNV is activated, the flow opens up, when it is de-activated the pressure is discharged downstream.



DISTRIBUTORS

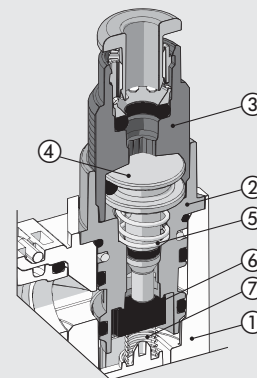
EB 80 - 3-WAY PNEUMATIC VALVE – PNV

### TECHNICAL DATA

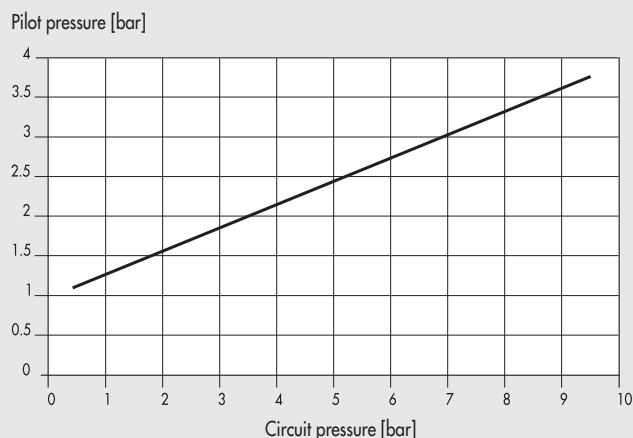
		$\varnothing 4$ (5/32")	$\varnothing 6$	$\varnothing 8$ (5/16")	$\varnothing 1/4"$
$\varnothing$ of cartridge fitting					
Max. operating pressure	bar			10	
	MPa			1	
	psi			145	
Flow rate at 6.3 bar $\Delta P$ 1 bar	Nl/min	110	380	420	380
Flow rate at 6.3 bar free exhaust	Nl/min			80	
Minimum pilot pressure				See graph	

### COMPONENTS

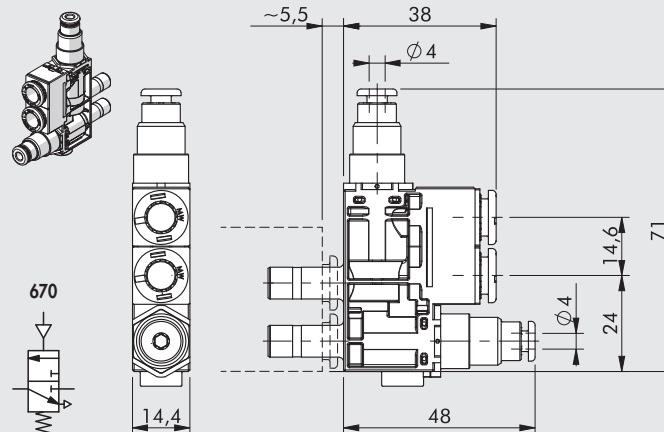
- ① BODY: technopolymer
- ② INSERT: nickel-plated brass
- ③ PILOT INSERT: nickel-plated brass
- ④ PISTON ROD: brass
- ⑤ CLAMPING SPRING: stainless steel
- ⑥ SEAL: NBR
- ⑦ POPPET SPRING: stainless steel



### MINIMUM PILOT PRESSURE



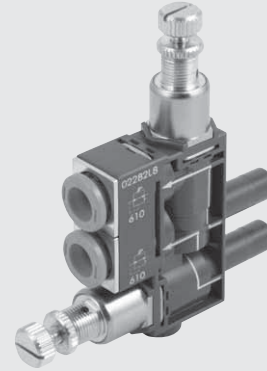
### DIMENSIONS



# EB 80 PRESSURE REGULATOR - REG

It regulates the pressure coming from the EB 80 base to individual branches. It comes with an overpressure relief device.

It can be used as an economizer: if the thrust in a cylinder must be exerted in one direction, e.g. at the piston rod output, while a lower thrust is required in the other direction, a lot of energy can be saved by inserting the pressure regulator into the port connected to piston rod retraction.

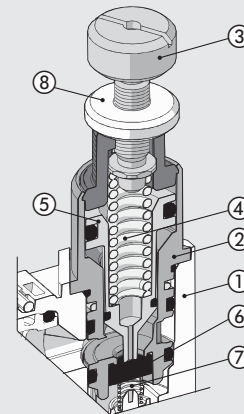


## TECHNICAL DATA

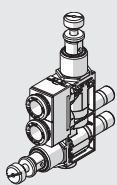
		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Ø of cartridge fitting		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Setting range		1 to 8 bar - 0.1 to 0.8 MPa - 14.5 to 116 psi			
Input pressure	bar	2 to 10			
	MPa	0.2 to 1			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar	Nl/min	80	130	150	130
	Nl/min	300	380	400	380
Adjustment		Manual or using a screwdriver			
Notes on use		The pressure must always be set upwards			

## COMPONENTS

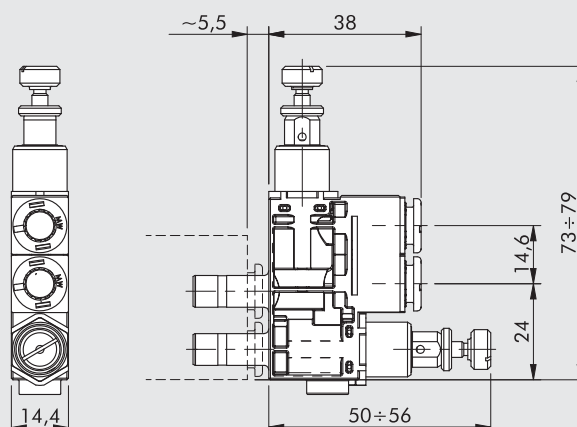
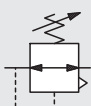
- ① BODY: technopolymer
- ② INSERT: nickel-plated brass
- ③ ADJUSTING SCREW: nickel-plated brass
- ④ ADJUSTING SPRING: steel
- ⑤ PISTON ROD: brass
- ⑥ SHUTTER: NBR
- ⑦ POPPET SPRING: stainless steel
- ⑧ ADJUSTING SCREW RING NUT: nickel-plated brass



## DIMENSIONS



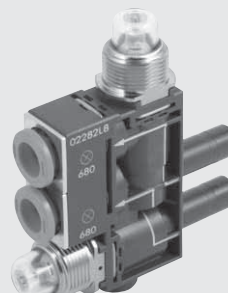
610



# EB 80 PRESSURE INDICATOR - LAM

Also called pneumatic lamp, it optically indicate the presence of compressed air in the circuit.

If there is no pressure, the transparent technopolymer bell is empty; if there is pressure an orange or a green sign is indicated.



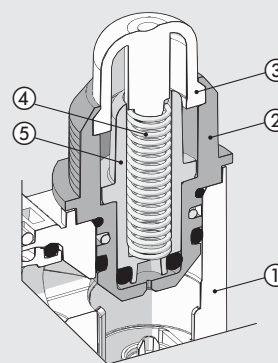
DISTRIBUTORS

EB 80 - PRESSURE INDICATOR - LAM

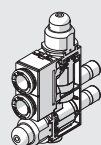
TECHNICAL DATA		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Ø of cartridge fitting					
Operating pressure	bar			2 to 10	
	MPa			0.2 to 1	
	psi			29 to 145	
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	130	500	600	500
Colour with pressure		Orange - Green			

## COMPONENTS

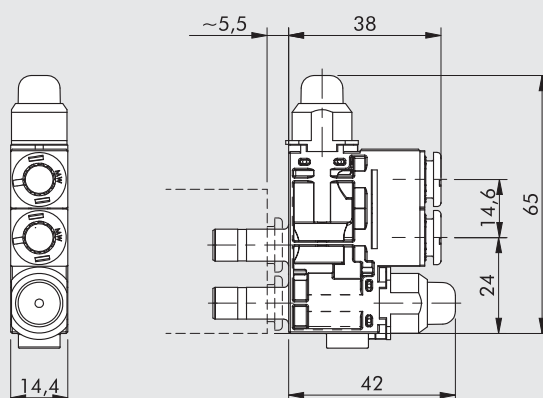
- ① BODY: technopolymer
- ② INSERT: nickel-plated brass
- ③ COVER: clear technopolymer
- ④ RETURN SPRING: stainless steel
- ⑤ MOBILE INDICATOR: technopolymer



## DIMENSIONS

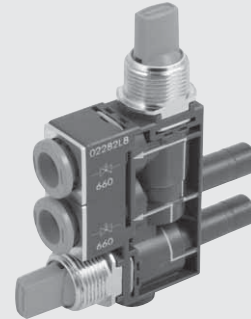


680/682



# EB 80 SHUT-OFF VALVE - V2V-V3V

It shuts off the flow of air coming from the EB 80 via a manual command. Two versions are available: the two-way unidirectional V2V valve and the V3V 3-way valve. The latter, when deactivated, intercepts the flow from the EB 80 valve and relieves downstream pressure.

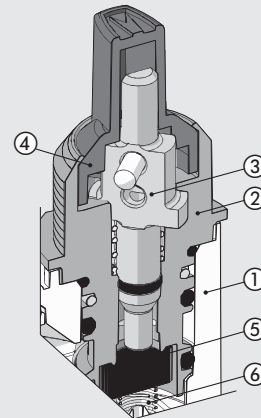


## TECHNICAL DATA

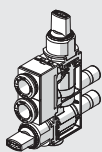
		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Ø of cartridge fitting	bar			10	
	MPa			1	
	psi			145	
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	120	370	420	370
Flow rate of the V3V when relieving at 6.3 bar	Nl/min			110	

## COMPONENTS

- ① BODY: technopolymer
- ② INSERT: nickel-plated brass
- ③ ROD: brass
- ④ KNOB: technopolymer
- ⑤ VALVE: NBR
- ⑥ VALVE COMPRESSION SPRING: stainless steel

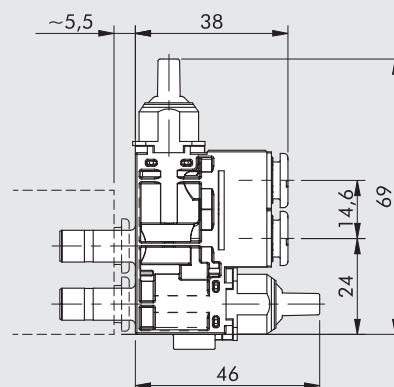


## DIMENSIONS



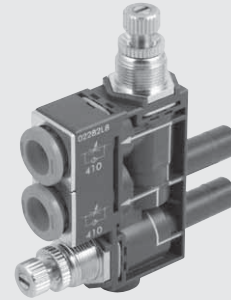
650

660



# EB 80 FLOW REGULATOR - RFL

It regulates the air flow rate, and hence the speed, in pneumatic actuators. Two versions are available: the bidirectional one regulating the flow in both directions and the unidirectional one regulating the flow when the EB 80 valve is relieving.



DISTRIBUTORS

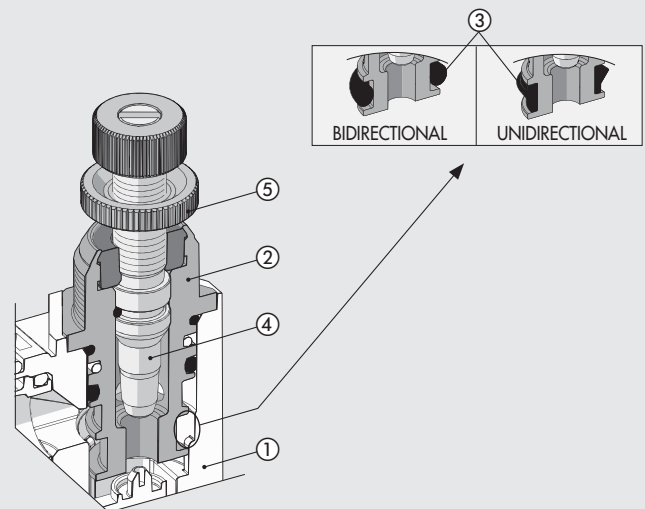
EB 80 - FLOW REGULATOR - RFL

### TECHNICAL DATA

		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Ø of cartridge fitting					
Max. operating pressure	bar			10	
	MPa			1	
	psi			145	
Maximum flow rate during regulation at 6.3 bar	Nl/min	440	650	710	650
Exhaust flow rate (unidirectional version)	Nl/min	450	720	800	720
Adjustment		Manual or using a screwdriver			
Operating system		Tapered needle			

### COMPONENTS

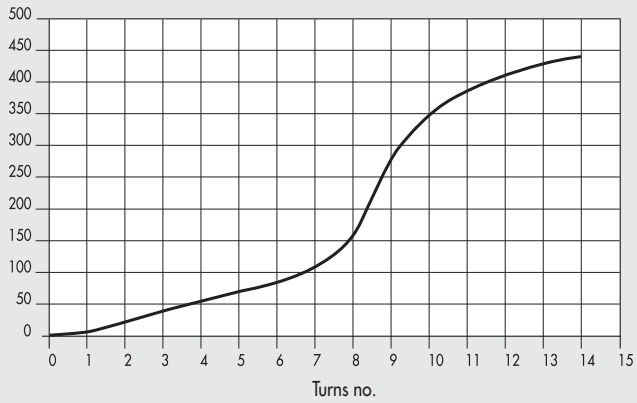
- ① BODY: technopolymer
- ② SEAL SUPPORT: nickel-plated brass
- ③ GASKET: NBR
- ④ ADJUSTING NEEDLE: brass
- ⑤ NEEDLE RING NUT: nickel-plated brass



**FLOW RATE CHARTS AT 6.3 bar DEPENDING ON THE TURNS EFFECTED BY THE REGULATION OF THE NEEDLE**

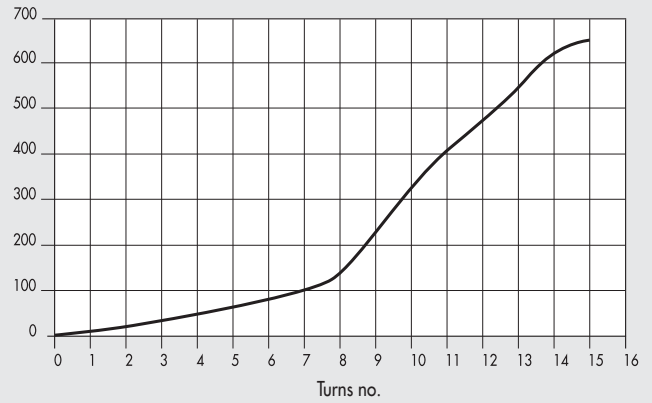
**RFL Ø4**

Flow rate [Nl/min]



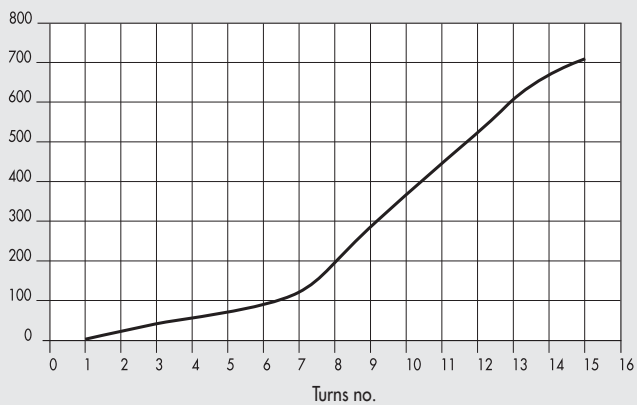
**RFL Ø6 - Ø1/4**

Flow rate [Nl/min]

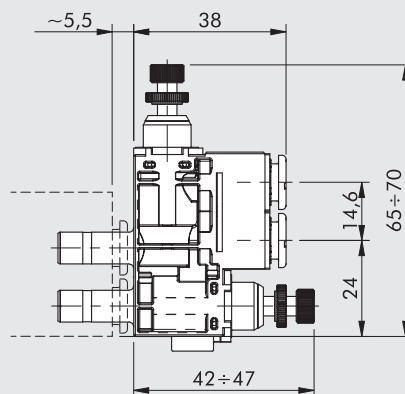
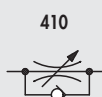
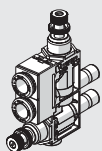


**RFL Ø8**

Flow rate [Nl/min]

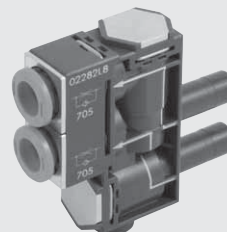


**DIMENSIONS**



# EB 80 CALIBRATED CHOKE - RFF

It regulates the air flow rate, and hence the speed, in pneumatic actuators. This is done by means of a choke of a calibrated diameter. In order to obtain the desired air flow rate, you can choose different choking diameters. Compared to adjustable versions, the main advantage is that it does not require any adjustments during the assembly of the machine and prevents from subsequent tampering. Two versions are available: the bidirectional one regulating the flow in both directions and the unidirectional one regulating the flow when the EB 80 valve is relieving.

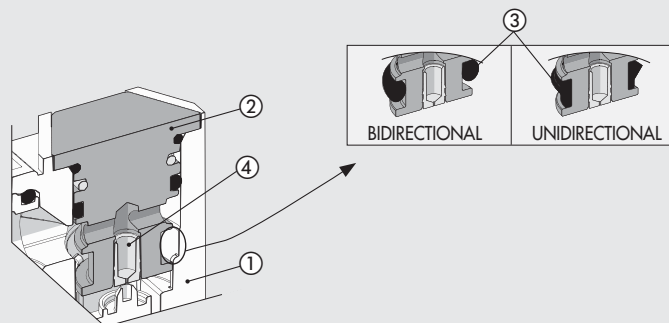


DISTRIBUTORS  
EB 80 - CALIBRATED CHOKE - RFF

TECHNICAL DATA		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Ø of cartridge fitting					
Max. operating pressure	bar			10	
	MPa			1	
	psi			145	
Flow rates				See tables	
Adjustment				Fixed	
Operating system				Calibrated hole	

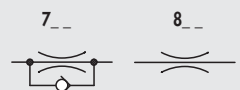
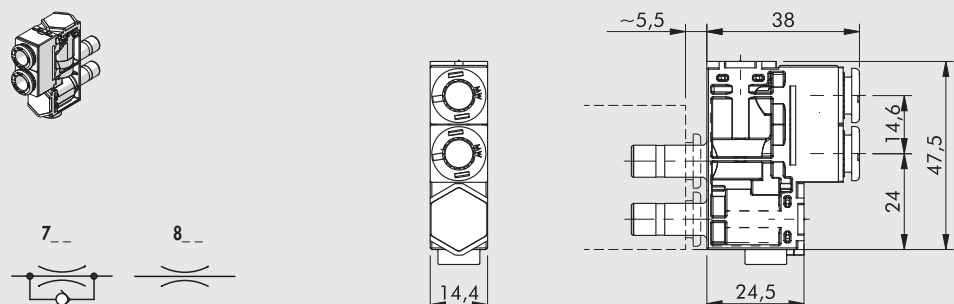
## COMPONENTS

- ① BODY: technopolymer
- ② SEAL SUPPORT: nickel-plated brass
- ③ GASKET: NBR
- ④ THROTTLE CARTRIDGE: brass



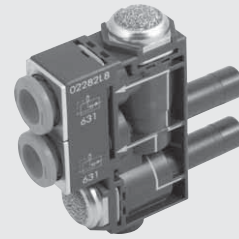
EXHAUST FLOW RATE AT 6.3 bar UNIDIRECTIONAL VERSION [Nl/min]				CHOKE FLOW-RATE AT 6 bar WITH FREE EXHAUST	
Choke [mm]	Ø 4	Ø 6 - Ø 1/4	Ø 8	Choke [mm]	Flow rate [Nl/min]
Ø 0.2	240	550	640	Ø 0.2	2
Ø 0.3	242	552	642	Ø 0.3	4
Ø 0.4	245	555	645	Ø 0.4	7
Ø 0.5	250	560	650	Ø 0.5	13
Ø 0.6	255	565	660	Ø 0.6	15
Ø 0.8	265	570	690	Ø 0.8	32
Ø 1.0	275	580	710	Ø 1.0	50
Ø 1.3	290	610	750	Ø 1.3	85
Ø 1.5	300	620	800	Ø 1.5	110

## DIMENSIONS



# EB 80 QUICK-EXHAUST VALVE - VSR

It speeds up the relieving of air coming from the actuators to the EB 80 and releases it into the atmosphere.  
 If the air coming from the actuators is polluted, it prevents it from entering into the EB 80 island, where it could risk to damage the valves.  
 Air relieving can be either silenced with a stainless steel wire or conveyed via an automatic fitting.



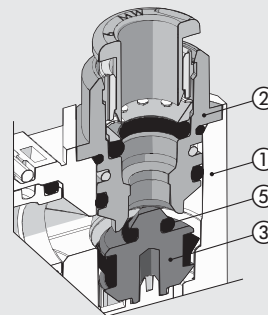
### TECHNICAL DATA

		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Ø of cartridge fitting					
Operating pressure	bar			1 to 10	
	MPa			0.1 to 1	
	psi			14.5 to 145	
Inlet flow rate at 6.3 bar ΔP 1 bar	Nl/min	90	210	270	210
Exhaust flow rate at 6.3 bar	Nl/min	330	700	750	700

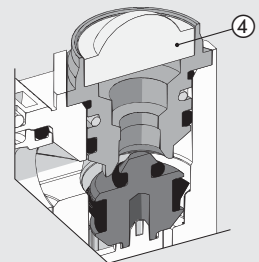
### COMPONENTS

- ① BODY: technopolymer
- ② INSERT: nickel-plated brass
- ③ VALVE: brass
- ④ SILENCER: stainless steel wire
- ⑤ GASKET: NBR

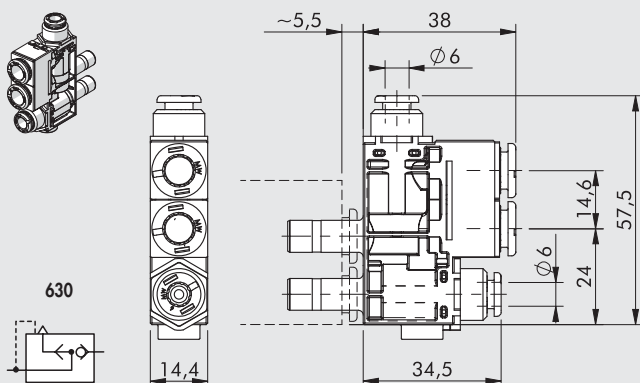
#### CONVEYED VERSION



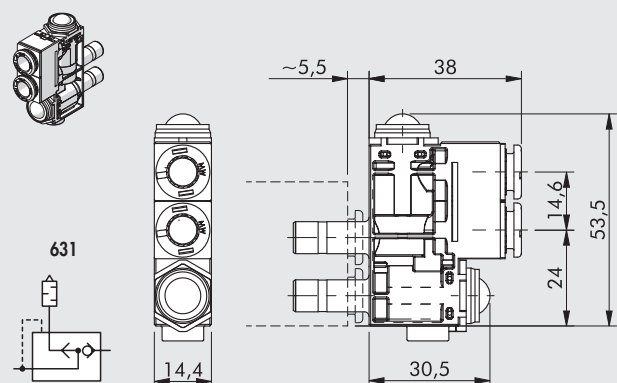
#### SILENCED VERSION



#### CONVEYED VERSION DIMENSIONS



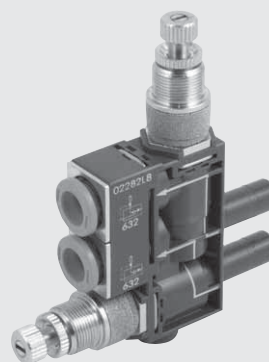
#### SILENCED VERSION DIMENSIONS





# EB 80 QUICK-EXHAUST VALVE WITH FLOW REGULATOR - VSRR

It speeds up the relieving of air coming from the actuators to the EB 80, releases it into the atmosphere and regulates the flow rate. It relieves the air coming from the utilities and regulates the quality of flow precisely by operating the knob provided.



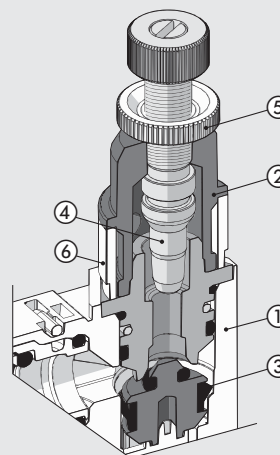
DISTRIBUTORS

EB 80 - QUICK-EXHAUST VALVE WITH FLOW REGULATOR - VSRR

TECHNICAL DATA		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Ø of cartridge fitting					
Operating pressure	bar	1 to 10			
	MPa	0.1 to 1			
	psi	14.5 to 145			
Inlet flow rate at 6.3 bar ΔP 1 bar	Nl/min	90	210	270	210
Max flow rate on exhaust at 6.3 bar	Nl/min	450	530	560	530
Adjustment		Manual or using a screwdriver			
Internal system		Tapered needle			

## COMPONENTS

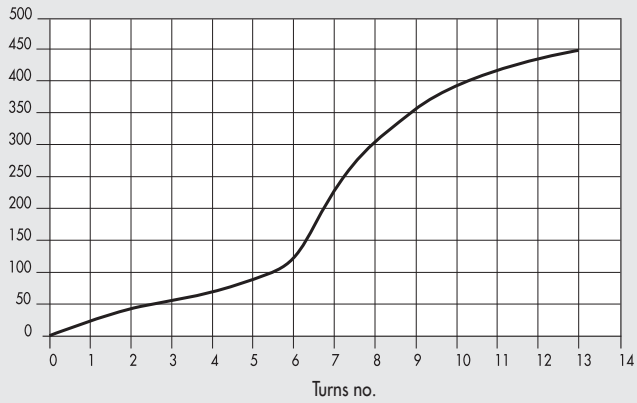
- ① BODY: technopolymer
- ② SEAL SUPPORT: nickel-plated brass
- ③ GASKET: NBR
- ④ ADJUSTING NEEDLE: brass
- ⑤ NEEDLE RING NUT: nickel-plated brass
- ⑥ SILENCER: sintered bronze



**EXHAUST FLOW CHARTS AT 6.3 bar DEPENDING ON THE TURNS EFFECTED BY THE REGULATION OF THE NEDDLE**

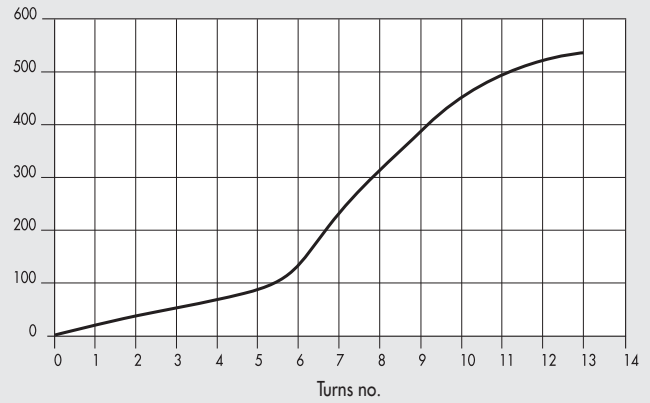
**VSRR Ø4**

Flow rate [Nl/min]



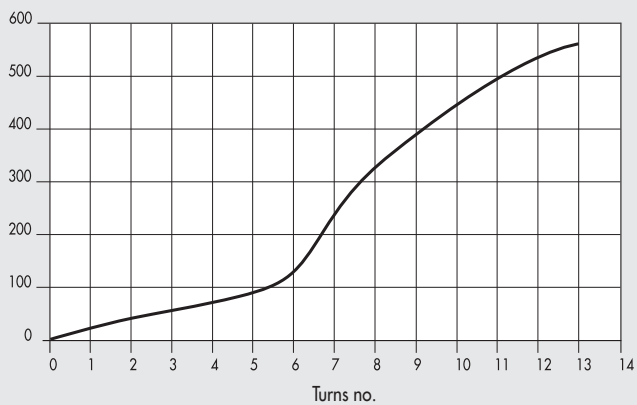
**VSRR Ø6 - Ø1/4**

Flow rate [Nl/min]



**VSRR Ø8**

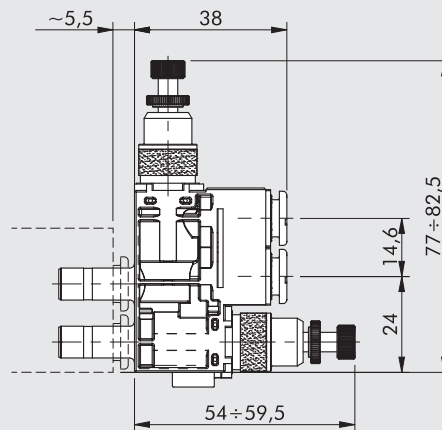
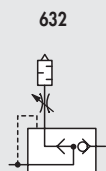
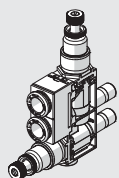
Flow rate [Nl/min]



**DISTRIBUTORS**

EB 80 - QUICK-EXHAUST VALVE WITH FLOW REGULATOR - VSRR

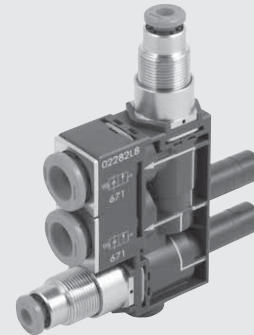
**DIMENSIONS**



# EB 80 UNIDIRECTIONAL 2-WAY PNEUMATIC VALVE - P2V

Unidirectional normally closed 2/2 valve pneumatically driven via a  $\varnothing 4$  pipe. Can intercept the flow of air coming from the EB 80 valve. When enabled, it opens the flow; when disabled it closes the pressurised circuit.

**N.B.:** Given the direction of the flow, it cannot be used to block the flow of air coming out of a cylinder.



DISTRIBUTORS

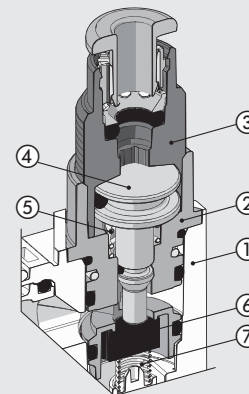
EB 80 - UNIDIRECTIONAL 2-WAY PNEUMATIC VALVE - P2V

### TECHNICAL DATA

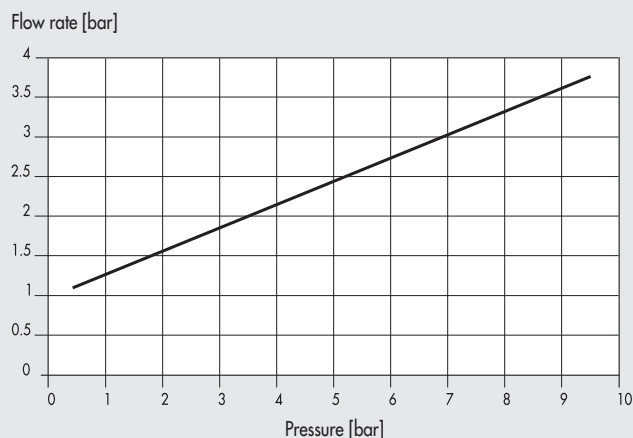
		$\varnothing 4$ (5/32")	$\varnothing 6$	$\varnothing 8$ (5/16")	$\varnothing 1/4"$
$\varnothing$ of cartridge fitting					
Max. operating pressure	bar			10	
	MPa			1	
	psi			145	
Flow rate at 6.3 bar $\Delta P$ 1 bar	Nl/min	110	370	420	370
Minimum pilot pressure			See graph		

### COMPONENTS

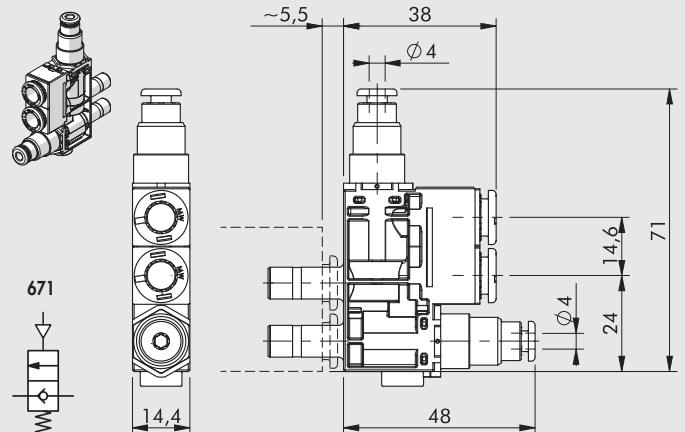
- ① BODY: technopolymer
- ② INSERT: nickel-plated brass
- ③ PILOT INSERT: nickel-plated brass
- ④ PISTON ROD: brass
- ⑤ CLAMPING SPRING: stainless steel
- ⑥ SEAL: NBR
- ⑦ POPPET SPRING: stainless steel



### MINIMUM PILOT PRESSURE



### DIMENSIONS



# EB 80 CHECK VALVE - VNR

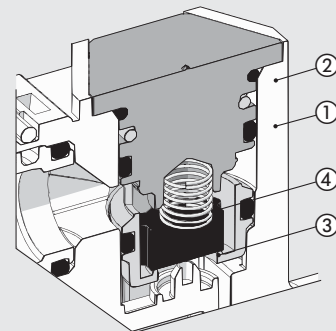
Check valve. Full flow from the EB 80 valve to the utility. It prevents the air flow from reversing downstream the VNR.



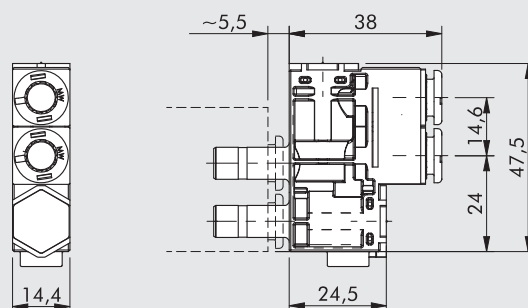
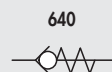
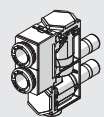
TECHNICAL DATA		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Ø of cartridge fitting					
Operating pressure	bar			0.5 to 10	
	MPa			0.05 to 1	
	psi			7.2 to 145	
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	350	420	450	420

## COMPONENTS

- ① BODY: technopolymer
- ② INSERT: nickel-plated brass
- ③ VALVE: NBR
- ④ VALVE COMPRESSION SPRING: stainless steel



## DIMENSIONS



DISTRIBUTORS  
EB 80 - CHECK VALVE - VNR

# EB 80 NO FUNCTION - NF

To be used when, on one of the two-way network, no pneumatic function is required.  
 The flow conveys directly from the inlet to the output fitting without any variation.



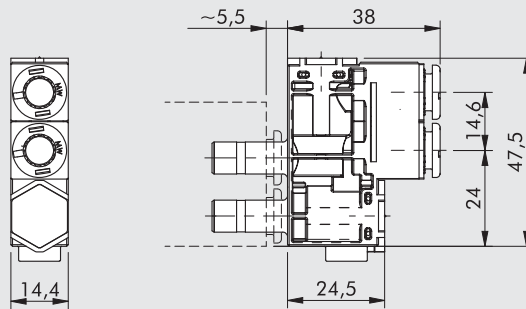
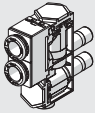
DISTRIBUTORS

EB 80 - NO FUNCTION - NF

## TECHNICAL DATA

TECHNICAL DATA	Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Ø of cartridge fitting				
Max. operating pressure	bar		10	
	MPa		1	
	psi		145	
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	130	500	600

## DIMENSIONS



## NOTES

# EB 80 SPLASH AREA

The splash-area assembly kits have been designed and developed for the Food & Beverage industry and, in general, for use in all the situations in which it is advisable to separate the solenoid valves from areas where there are fluids.

The kit can be used to fix a standard EB 80 island to a sheet metal plate, perforated by the customer, with compressed air fittings and pipes installed downstream.

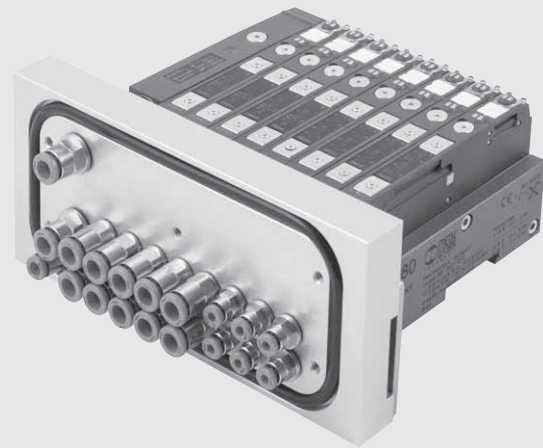
Two models are available, one designed to accommodate 3-8 valves and one 8-12 valves. Other configurations can be made on specific request.

The plate is available in two optional materials: anticorodal 6082 anodized aluminium and AISI 304 stainless steel.

Threaded holes are provided in the splash-area side of the plate for air supply, relief, control and utilities.

The EB 80 islands of any type can be fixed to the kit, with either multi-pin or fieldbus connection and signal modules, provided that they have one pneumatic supply source to avoid changing the pitch between valves, and the ports 2 and 4 have  $\varnothing 8$  fittings and the ports 1 and 3 have  $\varnothing 12$  fittings.

The valve island can be used with silenced relief provided that the threaded port of the plate is closed.



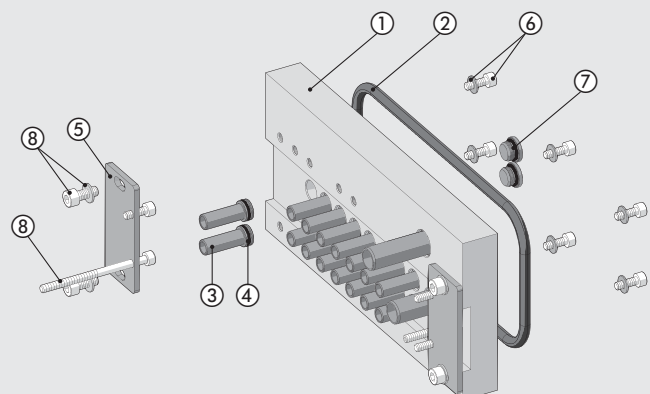
## TECHNICAL DATA

General technical data	See page <b>B2.4</b>
Protection rating at the splash-area side	IP67
Versions	3 to 8 positions; 8 to 12 positions
Bases configurable with this number of valves	For maximum 8-position version: 3, 4, 6, 7, 8 valves For the maximum 12-position version: 8, 9, 10, 11, 12 valves
Pneumatic fittings	1/4" supply and discharge M5 piloting 1/8" delivery

**N.B.:** The valve island to be used with the splash-area must be configured with  $\varnothing 8$  mm fittings on ports 2 and 4 and  $\varnothing 12$  mm fittings on ports 1, 3 and 5.

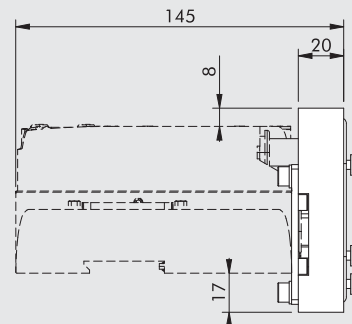
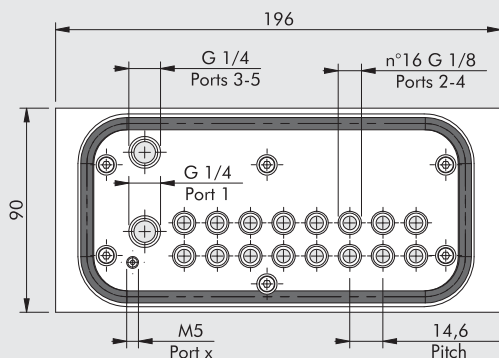
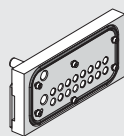
## COMPONENTS

- ① SPLASH-AREA PLATE: 6082 anodized aluminium or AISI 304 stainless steel
- ② SPLASH-AREA GASKET: NBR
- ③ EXTENSIONS: nickel-plated brass
- ④ GASKETS: NBR
- ⑤ FIXING BRACKET: AISI 304 stainless steel
- ⑥ SCREWS AND WASHERS: stainless steel
- ⑦ 1/8" PLUGS: nickel-plated brass (to cover unused outputs)
- ⑧ SCREWS AND WASHERS: galvanized steel

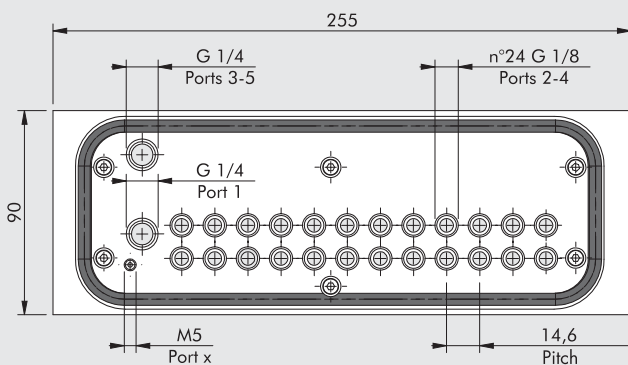
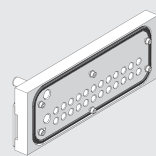


**DIMENSIONS AND ORDERING CODES**

**3 to 8 POSITION**



**8 to 12 POSITION**



Code	Description	Weight [g]
02282R7080	EB 80 splash-area kit 3-8 positions aluminum	919
02282R7081	EB 80 splash-area kit 3-8 positions stainless steel	2354
02282R7120	EB 80 splash-area kit 8-12 positions aluminum	1189
02282R7121	EB 80 splash-area kit 8-12 positions stainless steel	3046

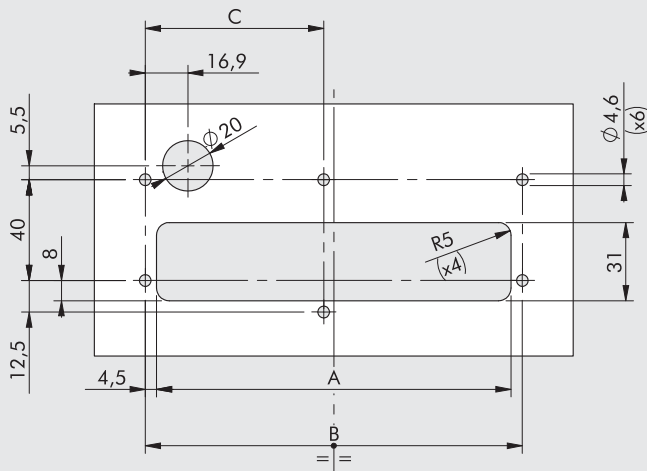
**DIMENSIONS FOR THE DRILLING OF THE FIXING INTERFACE**

**3 to 8 POSITION**

A	B	C
140.6	149.9	70.8

**8 to 12 POSITION**

A	B	C
199	208	100



**KEY TO CODES**

FAMILY	CATEGORY	SUBSYSTEM	NUMBER OF POSITIONS	MATERIAL
02282	R	7	08	0
02282 EB 80	R Spares and accessories	7 Splash-area	08 8 positions 12 12 positions	0 Anodized aluminum plate 6082 1 Plate AISI 304



NOTES

A large rectangular area with horizontal grey lines, intended for handwritten notes.

DISTRIBUTORS