Electrical multi-pole connection

Art. No. 150955

Type No. 02282E025

Exemplary illustration

The "Electrical Connection – E" subsystem powers EB 80 systems, transmits control signals to solenoid valves, manages I/O communication, and handles diagnostics. Available in multi-pole or fieldbus versions, the valve island operates identically with both (patented), supporting parallel and serial controls.

Smart electronics across all modules enable advanced diagnostics. The system supports 12 VDC and 24 VDC operation (patented), tolerates overvoltages up to 31.2 VDC, and functions with a minimum pilot voltage of 10.8 VDC.

Multi-pole versions retain full modularity and diagnostics and feature a single-piece metal housing. Fieldbus versions consist of a metal lower body, independent of protocol, and a technopolymer upper section tailored to specific bus protocols (except the IO-Link 64 OUT module, which comes with one-piece metal housing).

Technical data

Module type	E
Module description	multi-pole electrical connection
Version	25-pin
Supply voltage range	12 -10 % to 24 +30 % V DC
Operating voltage min.	10.8 V DC
Operating voltage max.	31.2 V DC
Max. admissible voltage	32 V DC*
Duty cycle	100 %
Switching polarity	configurable PNP or NPN
Power supply without controlled valves	0.1 W for module "electr. conn.-E" + 0.25 W per "Base-B"
Solenoid pilot power on start-up (speed up)	3 W for 15 ms
Solenoid pilot power after start-up (holding)	0,3 W
Power input	max. 3.15 W
Max. admissible current, continuous	6 A
Max. admissible current, instantaneous	9 A
Protection	system: overload, output: short-circuit
Diagnostics	FAULT (red) and OUT on "electr. connection-E", LED on valve
Diagnostic signals	short circuit, no control signal, invalid operating voltage

Technical data

Maximum number of solenoid controls	21
Maximum number of controllable solenoid valves	21, depending on number of solenoid pilots and type of base
Max. number of simultaneous solenoid controls on activation	24 V DC: 21 / 12 V DC: depending on voltage drop
Maximum current at 24 V DC	3 A
Maximum current at 12 V DC	6 A
Min. ambient temperature	-10 °C
Max. ambient temperature	50 °C
Housing	painted aluminum
Sealant	NBR
Protection IP	IP 65
Series	EB 80

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

Commercial data

eCl@ss 5.1.4	27291501
eCl@ss 9.0	27291390
UNSPSC_Code_v190501	40141603
UNSPSC_CodeDesc_v190501	Pneumatic valves

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 31.2VDC, are admitted. The minimum voltage for solenoid pilots can be 10.8VDC, i.e. 12VDC-10%.

The body of the multi-pole version is made of metal in one piece (as the IO-Link 64 OUT version); simplified versions that can only manage solenoid valves, but that keeps the whole modularity and diagnostics of the EB 80 family.

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.

TECHNICAL DATA

Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	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	W	3.15 for each solenoid pilot operated simultaneously + input and output
(data useful for the sizing of the power supply unit)		
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

	25-pin connector	44-pin connector	Fieldbus	IO-link 32 IN / 32 OUT	IO-link 64 OUT	additional island
Maximum number of controllable solenoid pilots	21	38	128	32	64	128
Maximum number of controllable solenoid valves	Ditto as above, depending on the number of solenoid pilots and type of base					
Degree of protection	IP65 (with connectors connected or plugged if not used)					
Weight g	180	180	350	350	180	320

*   Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.28
*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

VALVES

EB 80 - ELECTRICAL CONNECTION - E

SYSTEM VOLTAGE DROP

Voltage drop depends on the input maximum current drawn by the system and the length of the cable for connection to the system.
In a 24VDC-powered system, with cable lengths up to 20 m, voltage drops do not need to be taken into account.
In a 12VDC-powered system, there must be enough voltage to ensure correct operation. It is necessary to take into account any voltage drops due to the number of active solenoid valves, the number of valves controlled simultaneously and the cable length.
The actual voltage supplied to the solenoid pilots must be at least 10.8VDC.
More details are given in the instruction manual (please refer to the Metal Work website).
A synthesis of the verification algorithm is shown here below.

Maximum current: I_{max} [A] = $\dfrac{\text{no. of solenoid pilots controlled simultaneously} \times 4 + \text{no. of active solenoid valves} \times 0.5}{\text{VDC}}$

Voltage drop: with a 25-pole connector: $\Delta V = I_{max}$ [A] x Rs [0.067Ω/m] x 2L [m]
Voltage drop: with a 44-pole connector: $\Delta V = I_{max}$ [A] x Rs [0.067Ω/m] x L [m]
Where Rs is the cable resistance and L its length.

The voltage at the cable inlet, Vin must be at least 10.8VDC + ΔV

Example:
12VDC supply voltage, 5 m cable, 25-pin connector, 3 pilots activate while other 10 are already active:

$I_{max} = \dfrac{3 \times 4 + 10 \times 0.5}{12} = 1.41$ A

$\Delta V = (1.41 \times 0.067 \times 2 \times 5) = 0.95$VDC

This means that at the power supply voltage greater than or equal to 10.8 + 0.95 = 11.75VDC is required.
Vin =12VDC > 11.75 --> OK

KEY TO CODES

02282	E	0	25
FAMILY	SUBSYSTEM	SUPPLY	TYPE
02282 EB 80	**E** Electrical connection	**0** Complete	**25** 25-pin connector
			44 44-pin connector
			EN EtherNet/IP
			EC EtherCAT
			PN Profinet IO
			CN CANopen
			PB Profibus-DP
			PL Ethernet POWERLINK
			IO IO-Link 32 IN / 32 OUT
			LK IO-Link 64 OUT
			CC CC-Link IE Field Basic
			AD Additional island

NOTE

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 31.2VDC, are admitted. The minimum voltage for the solenoid pilots can be 10.8VDC, i.e. 12VDC - 10%. The body of the multi-pole version is made of metal in a single piece.

TECHNICAL DATA

Supply voltage range	VDC	12 -10% 24 +30%	
Minimum operating voltage	VDC	10.8 *	
Maximum operating voltage	VDC	31.2	
Maximum admissible voltage	VDC	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 B2.28	
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 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.28**

** 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.

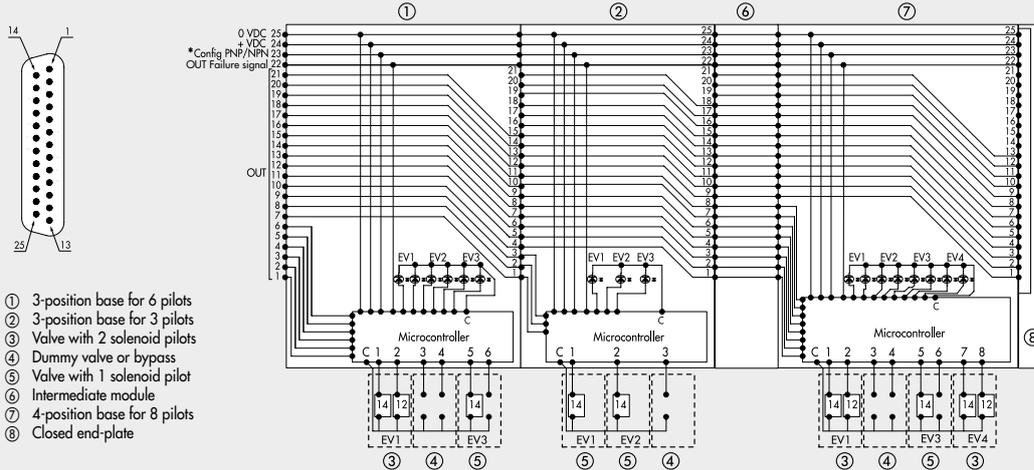*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

COMPONENTS

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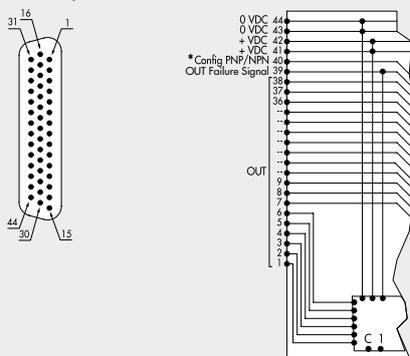⑤ GRUB SCREW securing the DIN bar or bracket: zinc-plated steel

RIEGLER
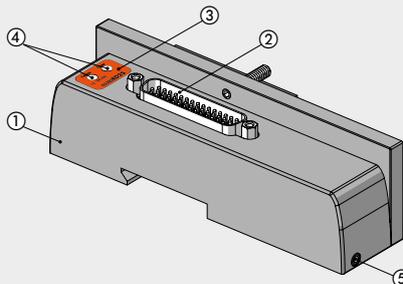
WIRING DIAGRAM

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
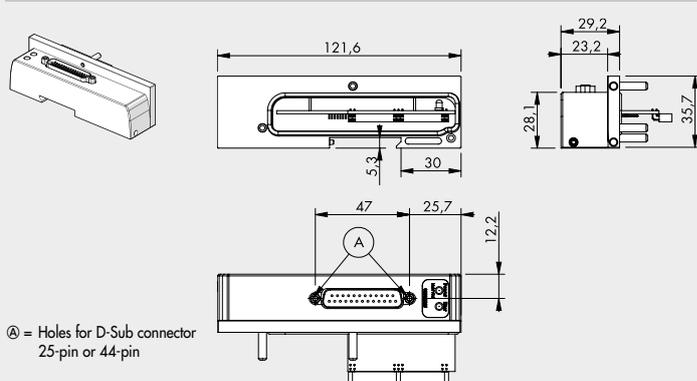⑦ 4-position base for 8 pilots
⑧ Closed end-plate

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]
02282**E025**	EB 80 25-pin electrical connection	260
02282**E044**	EB 80 44-pin electrical connection	260

RIEGLER

METAL WORK® PNEUMATIC

ACCESSORIES

IP65 25-PIN PRE-WIRED PLUG CONNECTOR
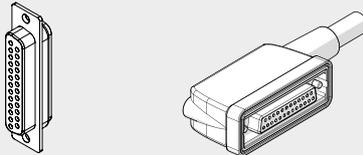
Code	Description	Weight [g]
02269A0100	IP65 25-pin 90° connector, UL cable L = 1 m	180
02269A0250	IP65 25-pin 90° connector, UL cable L = 2.5 m	365
02269A0500	IP65 25-pin 90° connector, UL cable L = 5 m	680
02269A1000	IP65 25-pin 90° connector, UL cable L = 10 m	1220
02269A2000	IP65 25-pin 90° connector, UL cable L = 20 m	2350
02269C0100 **	IP65 25-pin 90° connector, UL H-FLEX CL6, cable L = 1 m	180
02269C0250 **	IP65 25-pin 90° connector, UL H-FLEX CL6, cable L = 2.5 m	365
02269C0500 **	IP65 25-pin 90° connector, UL H-FLEX CL6, cable L = 5 m	680
02269C1000 **	IP65 25-pin 90° connector, UL H-FLEX CL6, cable L = 10 m	1220

** Very flexible cables, class 6 according to IEC 60228

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
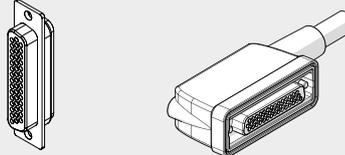
Code	Description	Weight [g]
02269B0100	IP65 44-pin 90° connector, UL cable L = 1 m	275
02269B0250	IP65 44-pin 90° connector, UL cable L = 2.5 m	630
02269B0500	IP65 44-pin 90° connector, UL cable L = 5 m	1180
02269B1000	IP65 44-pin 90° connector, UL cable L = 10 m	2210
02269B2000	IP65 44-pin 90° connector, UL cable L = 20 m	4340
02269D0100 **	IP65 44-pin 90° connector, UL H-FLEX CL6, cable L = 1 m	275
02269D0250 **	IP65 44-pin 90° connector, UL H-FLEX CL6, cable L = 2.5 m	630
02269D0500 **	IP65 44-pin 90° connector, UL H-FLEX CL6, cable L = 5 m	1180
02269D1000 **	IP65 44-pin 90° connector, UL H-FLEX CL6, cable L = 10 m	2210

** Very flexible cables, class 6 according to IEC 60228

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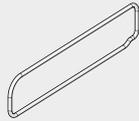 Connect to 0VDC if (Out) valves with a NEGATIVE signal are to be controlled

SPARE PARTS

EB 80 ELECTRICAL CONNECTION INTERFACE OR SEAL

Code	Description
02282R1003	EB 80 electrical connection interface OR seal

Comes in 10-pc. packs

NOTES

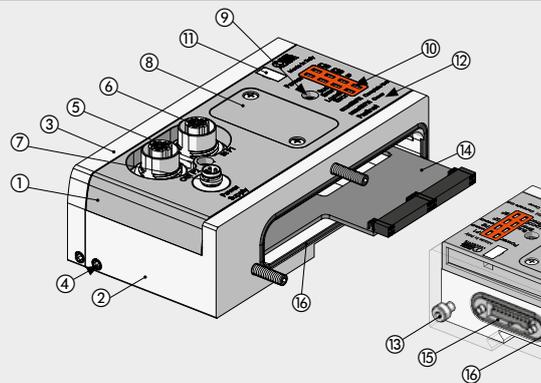# EB 80 ELECTRICAL CONNECTION WITH FIELDBUS - E

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 31.2VDC, are admitted. The minimum voltage for solenoid pilots can be 10.8VDC, i.e. 12VDC - 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.
The exception is the IO-Link 64 OUT version which is composed of a single aluminum element and can only manage solenoid valves (32 or 64) while maintaining all the modularity and diagnostic features of the EB 80 family.

TECHNICAL DATA

Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	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 (32 for IO-Link 32 IN / 32 OUT; 64 for IO-Link 64 OUT)
Maximum number of simultaneously controllable solenoid pilots		38
to actuate a greater number of solenoid pilots at the same time, add "Intermediate modules - M" with electrical connection		
Maximum number of signals **		128 digital inputs, 128 digital outputs, 16 analogue inputs, 16 analogue outputs
		(32 for IO-Link 32 IN / 32 OUT)
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, CC-Link IE Field Basic
Degree of protection		IP65 (with connectors connected or plugged if not used)
Weight	g	350 (180 for IO-Link 64 OUT)

*   Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.28
**   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 CLOSING PLATE: painted aluminium
④ GRUB SCREW securing the DIN bar or bracket: zinc-plated 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
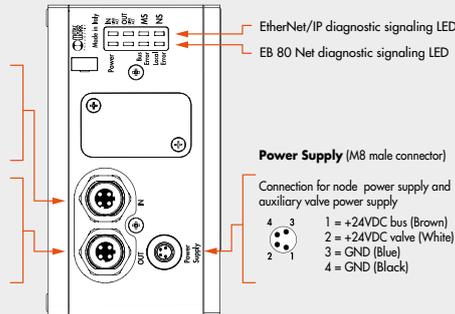⑮ CONNECTOR for input/output signal modules
⑯ GASKETS interfacing: NBR

RIEGLER & Co. KG
Schützenstraße 27
72574 Bad Urach
Tel. +49 7125 9497-642
technik@riegler.de

Page   9 of 26

Subject to technical changes and errors reserved.
The proficiency testing is the responsibility of the user.
22.10.2025   The specified data do not represent legally guaranteed properties.

EtherNet/IP WIRING DIAGRAM

End plate with intermediate control

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

EtherNet/IP 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 = +24VDC bus (Brown)
2 = +24VDC valve (White)
3 = GND (Blue)
4 = GND (Black)

EB 80 Net (M8 female connector)
1 = CAN H
2 = CAN L
3 = Token
4 = GND

VALVES
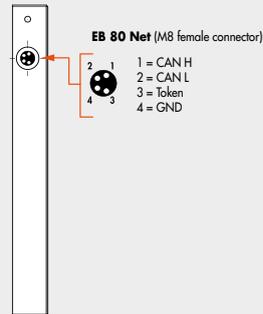
TECHNICAL DATA

Fieldbus		10 - 100 Mbit/S - Full-duplex - Half-duplex - Supports auto-negotiation and Quick Connect
Factory settings		IP address: 192.168.192.32
Addressing		Software - DHCP hardware
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	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 Icc 180 mA at 24VDC
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 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.28
**   Refer to the user manual for a detailed description.
*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**
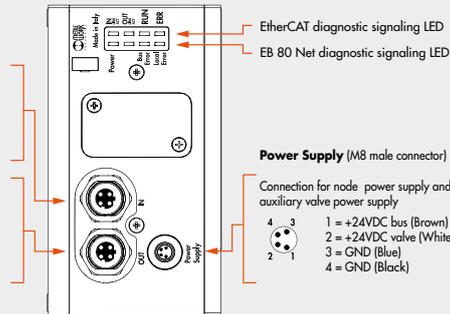
EtherCAT WIRING DIAGRAM

End plate with intermediate control

Connection to the EtherCAT network

IN (M12 female connector, D encoding)
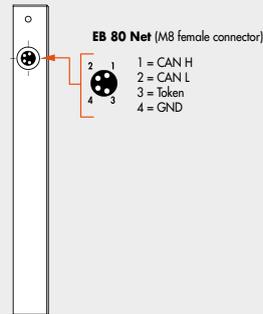1 = TD+
2 = RD+
3 = TD-
4 = RD-
Metal ring nut = Shield

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 = +24VDC bus (Brown)
2 = +24VDC valve (White)
3 = GND (Blue)
4 = GND (Black)

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	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	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 Icc 180 mA at 24VDC
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 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.28
**   Refer to the user manual for a detailed description.
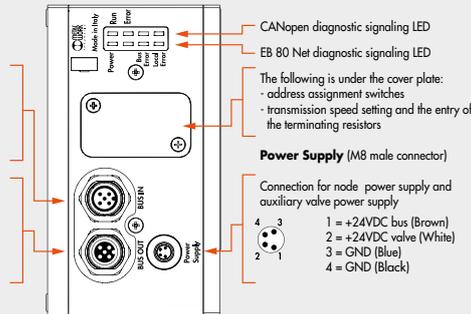*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

VALVES

EB 80 - ELECTRICAL CONNECTION WITH FIELDBUS - E

CANopen WIRING DIAGRAM

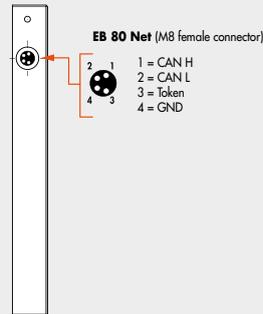**Connection to the CANopen network**

BUS IN (M12 male connector, A encoding)
1 = CAN_SHLD
2 = - - -
3 = CAN_GND
4 = CAN_H
5 = CAN_L
Metal ring nut = Shield

BUS OUT (M12 female connector, A encoding)
1 = CAN_SHLD
2 = - - -
3 = CAN_GND
4 = CAN_H
5 = CAN_L
Metal ring nut = Shield

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 = +24VDC bus (Brown)
2 = +24VDC 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

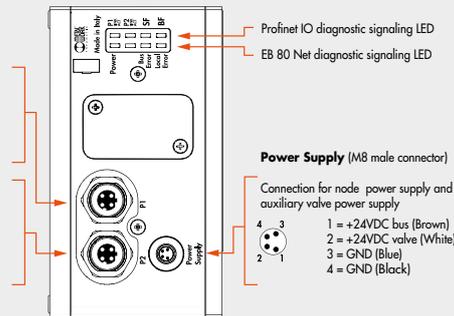| TECHNICAL DATA		
Fieldbus		Complying with CiA DS401 specification
Factory settings		Module denomination: EB80series - Address 5
Addressing		Hardware via DIP SWITCH
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	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 Icc 180 mA at 24VDC
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 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.28

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

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

RIEGLER

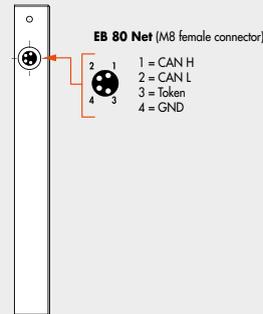**METAL WORK** ® **PNEUMATIC**

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

Profinet IO diagnostic signaling LED
EB 80 Net diagnostic signaling LED

End plate with intermediate control

EB 80 Net (M8 female connector)
1 = CAN H
2 = CAN L
3 = Token
4 = GND

Power Supply (M8 male connector)
Connection for node power supply and auxiliary valve power supply
1 = +24VDC bus (Brown)
2 = +24VDC valve (White)
3 = GND (Blue)
4 = GND (Black)

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	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	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 Icc 180 mA at 24VDC
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 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.28
**   Refer to the user manual for a detailed description.
*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

Profibus-DP WIRING DIAGRAM

End plate with intermediate control

EB 80 Net (M8 female connector)
1 = CAN H
2 = CAN L
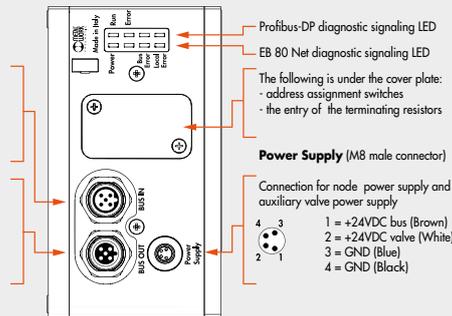3 = Token
4 = GND

Connection to the Profibus-DP network

BUS IN (M12 Male Connector, B encoding)
1 = 5 VDC*
2 = A
3 = 0 VDC*
4 = B
5 = Shield

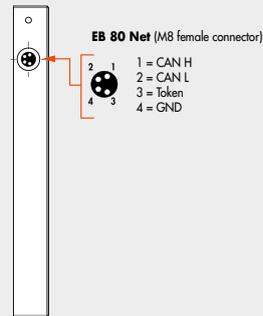**BUS OUT** (M12 female connector, B encoding)
1 = 5 VDC*
2 = A
3 = 0 VDC*
4 = B
5 = Shield

* 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 = +24VDC bus (Brown)
2 = +24VDC valve (White)
3 = GND (Blue)
4 = GND (Black)

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	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	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 24VDC
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 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.28
** Refer to the user manual for a detailed description.
*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

Ethernet POWERLINK WIRING DIAGRAM
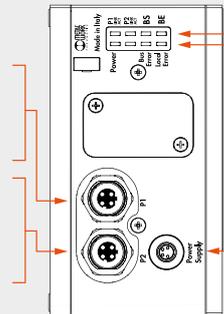
End plate with intermediate control

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

EB 80 Net (M8 female connector)

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

Power Supply (M8 male connector)

Connection for node power supply and auxiliary valve power supply

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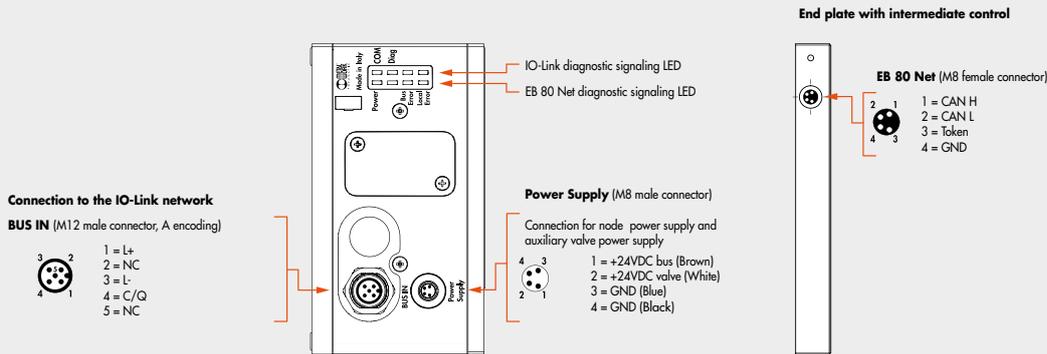2 = +24VDC valve (White)
3 = GND (Blue)
4 = GND (Black)

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	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	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 24VDC
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 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.28
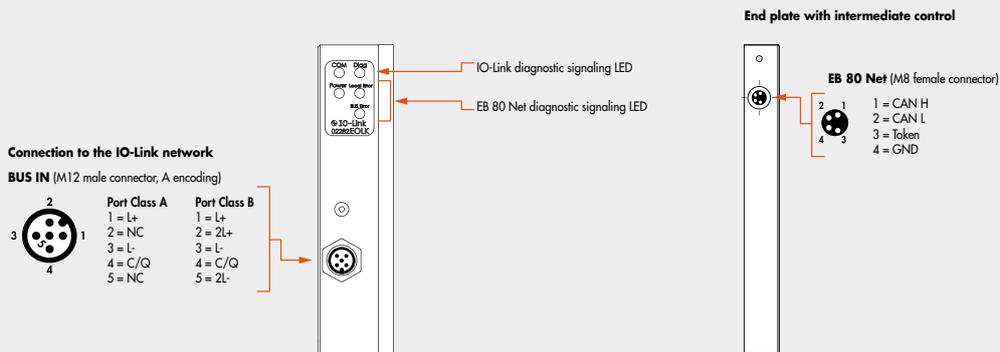**   Refer to the user manual for a detailed description.
*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

VALVES

EB 80 - ELECTRICAL CONNECTION WITH FIELDBUS - **E**

VALVES

IO-Link 32 IN / 32 OUT WIRING DIAGRAM

End plate with intermediate control

IO-Link diagnostic signaling LED

EB 80 Net diagnostic signaling LED

EB 80 Net (M8 female connector)

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

Power Supply (M8 male connector)

Connection for node power supply and auxiliary valve power supply

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

Connection to the IO-Link network

BUS IN (M12 male connector, A encoding)

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

BUS IN

Power Supply

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)	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	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 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.28
**   Refer to the user manual for a detailed description.
*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

IO-Link 64 OUT WIRING DIAGRAM

End plate with intermediate control

EB 80 Net (M8 female connector)

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

IO-Link diagnostic signaling LED

EB 80 Net diagnostic signaling LED

Connection to the IO-Link network

BUS IN (M12 male connector, A encoding)

Port Class A	Port Class B
1 = L+	1 = L+
2 = NC	2 = 2L+
3 = L-	3 = L-
4 = C/Q	4 = C/Q
5 = NC	5 = 2L-

VALVES

TECHNICAL DATA

Fieldbus		IO-Link version 1.1
Communication speed	Kbps	230.4 (COM3)
Vendor ID / Device ID		1046 (hex 0x0416) / 64 (hex 0x000040)
Minimum cycle time	ms	2.8
Process data length		1 byte of Input / 8 byte of Output
Valves supply voltage range	VDC	12 -10% 24 +30%
Minimum valves operating voltage	VDC	10.8 *
Maximum valves operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
IO-Link power supply (L+L - Bus IN connector)	VDC	min 18, 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 - port class B
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 64 OUT instruction manual
Maximum number of pilots		64
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 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page **B2**.28
**   Refer to the user manual for a detailed description.
*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

N.B.: The EB 80 island with IO-Link 64 OUT can be connected with an EB 80 island with Additional electrical control, but the latter cannot manage IN or OUT modules.

B2.41

RIEGLER

CC-Link IE Field Basic WIRING DIAGRAM

End plate with intermediate control

Connection to the CC-Link IE Field Basic 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
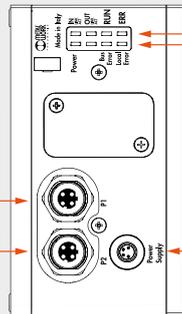
CC-Link IE Field Basic diagnostic signaling LED
EB 80 Net diagnostic signaling LED

EB 80 Net (M8 female connector)
1 = CAN H
2 = CAN L
3 = Token
4 = GND

Power Supply (M8 male connector)
Connection for node power supply and
auxiliary valve power supply
1 = +24VDC bus (Brown)
2 = +24VDC valve (White)
3 = GND (Blue)
4 = GND (Black)
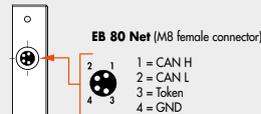
| TECHNICAL DATA		
Fieldbus		100 Mbit/s Number of occupied stations: from 1 to 4
Factory settings		IP address: 192.168.3.32 Subnet Mask: 255.255.255.0
Addressing		Software
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	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 **		CC-Link IE Field Basic: 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 24VDC
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 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.28
**   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

IO-Link version
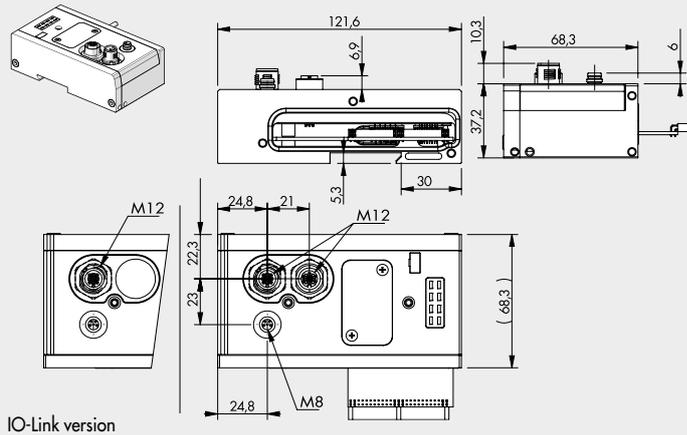
Code	Description	Weight [g]
02282**E0EN**	EB 80 Electrical connection EtherNet/IP	600
02282**E0EC**	EB 80 Electrical connection EtherCAT	600
02282**E0PN**	EB 80 Electrical connection Profinet IO	600
02282**E0CN**	EB 80 Electrical connection CANopen	600
02282**E0PB**	EB 80 Electrical connection Profibus-DP	600
02282**E0PL**	EB 80 Electrical connection Ethernet POWERLINK	600
02282**E0IO**	EB 80 Electrical connection IO-Link 32 IN / 32 OUT	580
02282**E0LK**	EB 80 Electrical connection IO-Link 64 OUT	190
02282**E0CC**	EB 80 Electrical connection CC-Link IE Field Basic	580

IO-Link 64 Output version
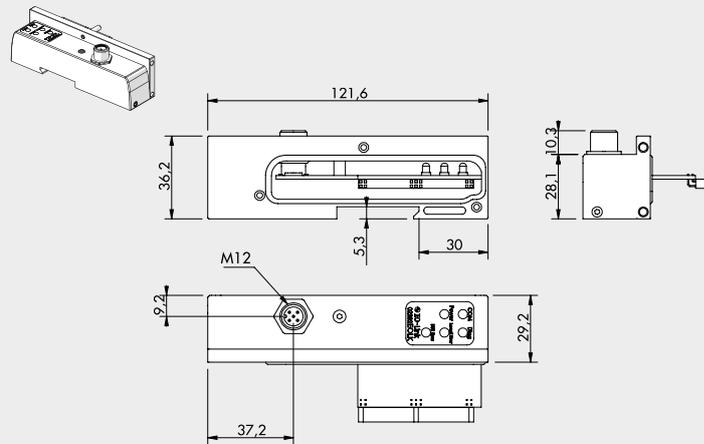
NOTES

VALVES

EB 80 - ELECTRICAL CONNECTION WITH FIELDBUS - E

B2.43

ACCESSORIES

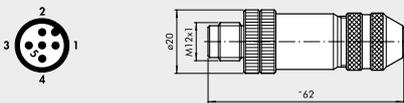### M12 FEMALE CONNECTOR FOR BUS-IN, A ENCODING
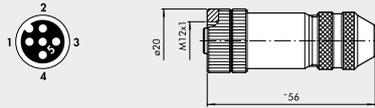
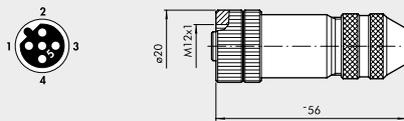| Code	Description
0240009055	M12 5-pin female connector, encoding A

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

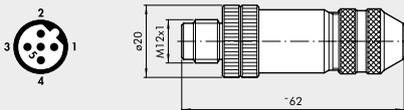### M12 FEMALE CONNECTOR FOR BUS-IN, B ENCODING

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

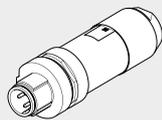### M12 BUS CONNECTOR, D ENCODING

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, CC-Link IE Field Basic)

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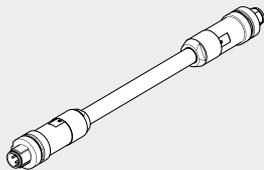
Code	Description
0240005103	Straight connector for M12-M12 4-pin BUS, D-coded, with 3 m cable
0240005105	Straight connector for M12-M12 4-pin BUS, D-coded, with 5 m cable
0240005110	Straight connector for M12-M12 4-pin BUS, D-coded, with 10 m cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP, Ethernet POWERLINK, CC-Link IE Field Basic)

STRAIGHT CONNECTOR FOR M12 BUS, D-CODED

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, CC-Link IE Field Basic)

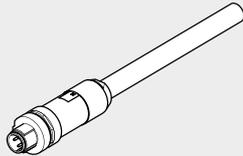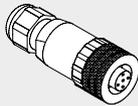| Pin	Cable color
1	Yellow
2	White
3	Red
4	Blue

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
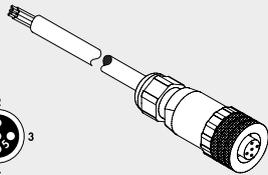
Code	Description
W0970513002	5-PIN M12x1 straight connector with wire L = 5 m

Note: Can be used for IO-Link

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

90° CONNECTOR FOR M12, A-CODED
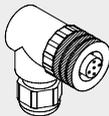
Code	Description
W0970513003	M12x1 5-PIN 90° connector

Note: Can be used for IO-Link

90° CONNECTOR WITH WIRE FOR M12, A-CODED
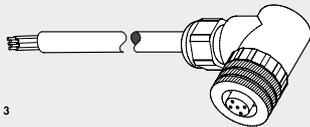
Code	Description
W0970513004	M12x1 5-PIN 90° connector with wire L = 5 m

Note: Can be used for IO-Link

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

T-CONNECTOR M12 A-CODED / M8 MALE FOR AUXILIARY POWER

Code	Description
0240009070	T - connector for auxiliary power

Note: Can be used for IO-Link 64 OUT

M12 female
L+	1	
2L+	2	
L-	3	
Q	4	
2L-	5	

M12 male
1	L+
2	NC
3	L-
4	Q
5	NC

M8 male
4 3 2 1
2L- 2L- 2L+ 2L+

VALVES

EB 80 - ELECTRICAL CONNECTION WITH FIELDBUS - E

B2.45

DIMENSIONS

DIMENSION OF VERSIONS WITH MULTI-POLE CONNECTION

E	P	B	M	B	C	
29,2	20,2	58,4	20,2	43,8	8	

121,6 4,2

65,6

30 5,3 ~16,5

DIMENSION OF VERSIONS WITH FIELD BUS OR ADDITIONAL CONNECTION

(E)	S	E	P	B	M	B	C	
9,3	52,6	59	20,2	58,4	20,2	43,8	13,7	

121,6 4,2

65,6

30 5,3 ~16,5

VALVES

EB 80 ELECTRO-PNEUMATIC SYSTEM

B2.11

VALVES

EB 80 ELECTRO-PNEUMATIC SYSTEM

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
Example		
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
Abbreviation		
B4086666	0	VVWF

The description is therefore a sequence of this type:

EB 80	- S _ _	- E _ _	- P _ _ _ _	- B _ _ _ _ _ _ _ _ _ _ _	- M _ _ _ _ _	- C_
EB 80 system	Electrical 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**.22	see page **B2**.28	see page **B2**.52	see page **B2**.55 and **B2**.60	see page **B2**.72	see page **B2**.75

Example:
EB 80-S01-E0EN-P3XZ00-B40866660VWKN-M300Z30-B30388800VVN-C2

EB 80	- S01	- E0EN	- P3XZ00	- B40866660VWKN	- 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

SEZ. A-A

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.

VALVES

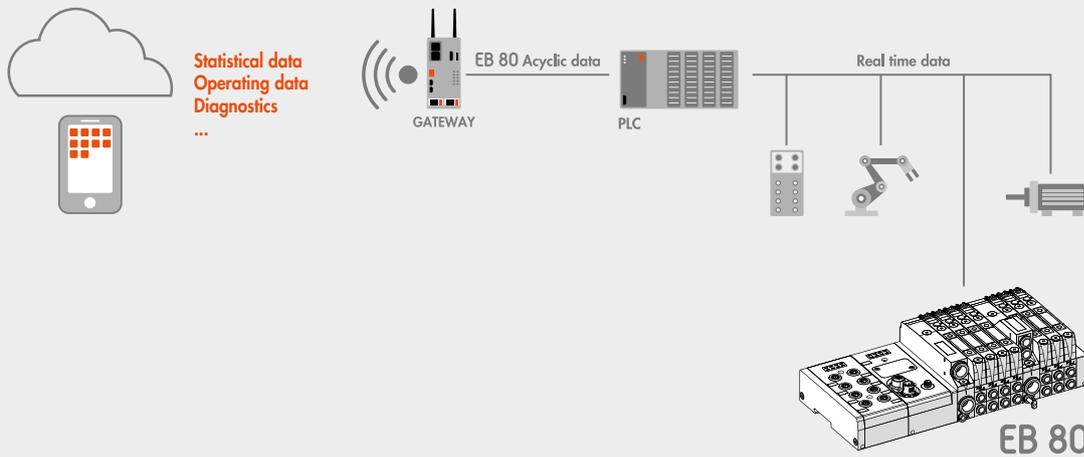EB 80 ELECTRO-PNEUMATIC SYSTEM
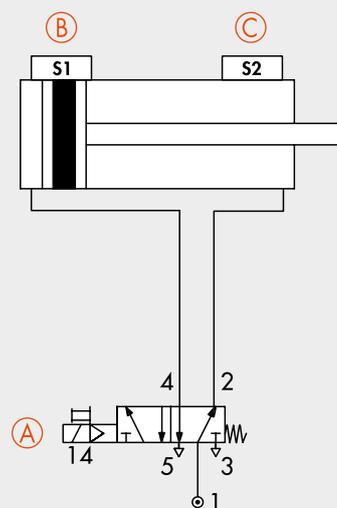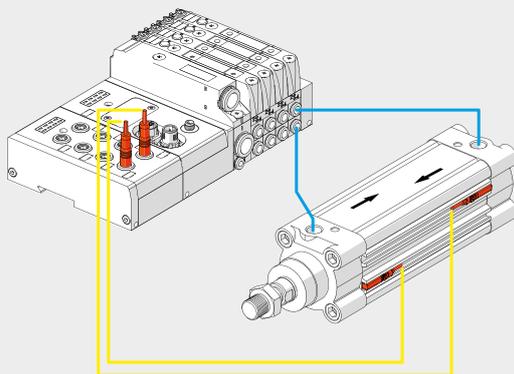
PLC-BASED DATA COLLECTION

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.
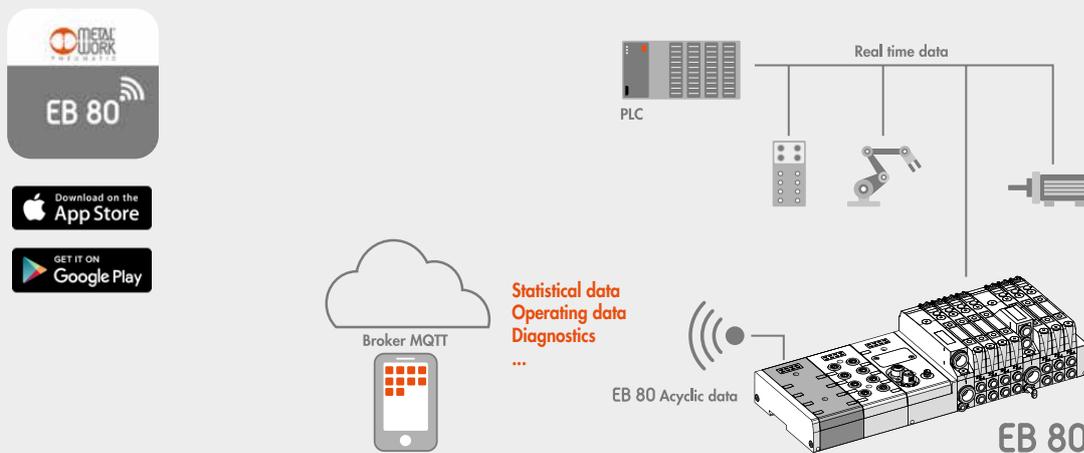
Statistical data
Operating data
Diagnostics
...

EB 80 Acyclic data

GATEWAY

PLC

Real time data

EB 80

EB 80 WIRELESS DATA COLLECTION

Integrated into the EB 80, this module provides connection to Wi-Fi networks and Bluetooth® devices to display diagnostic and operating data.
The APP specifically developed by Metal Work, called EB80Up, can connect Android and IOS devices for easy viewing of diagnostic and operating data plus the setting of network parameters.

EB 80

Download on the App Store

GET IT ON Google Play

PLC

Real time data

Broker MQTT

Statistical data
Operating data
Diagnostics
...

EB 80 Acyclic data

EB 80

RIEGLER & Co. KG
Schützenstraße 27
72574 Bad Urach
Tel. +49 7125 9497-642
technik@riegler.de

Accessories

	Art. No.	Type No.
Multi-pole cable, D-Sub female connector 25-pin 90° / open ended, IP65, length 1 m	153728	02269A0100
Multi-pole cable, D-Sub female connector 25-pin 90° / open ended, IP65, length 2.5 m	153729	02269A0250
Multi-pole cable, D-Sub female connector 25-pin 90° / open ended, IP65, length 5 m	153730	02269A0500
Multi-pole cable, D-Sub female connector 25-pin 90° / open ended, IP65, length 10 m	153731	02269A1000
Multi-pole cable, D-Sub female connector 25-pin 90° / open ended, IP65, length 20 m	153732	02269A2000
Additional fixing bracket for OMEGA bar, for valve island EB 80	153576	02282R4001

Spareparts

	Art. No.	Type No.
EB 80 interface gasket for electrical connection, PU 10 pcs.	153910	02282R1003