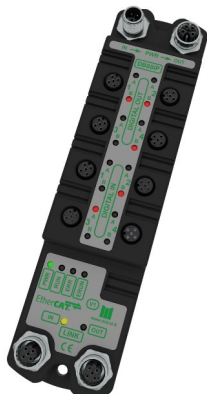


MITROL[®] srl

EtherCAT IP module

**DIGITAL INPUT/OUTPUT****DB88IP - Version V1**

Introduction



DB88IP is a slave EtherCAT module with up to 16 isolated input/output channels.

Diagnostic leds indicate EtherCAT connection status and digital I/O.

EtherCAT[®]

Hardware Specification

Digital Output

Channels	8
Output current for each channel	2A
Load type	Ohmic, inductive and lamp
Output protection	Shortcircuit and overload
Switching time	<1ms

Digital Input

Channels	8
OFF voltage level	<5V
ON voltage level	>15V
Maximum input voltage	36V
Input filter	Typical 1ms
Input current	4mA / Channel @ 24V

Electrical

Power supply Vs	24 Vdc typ (range 18..36V) – Power supply for module and for digital input					
Power supply Vp	24 Vdc typ (range 18..36V) Power supply for digital output					
Electrical isolation	2500Vrms					
Power consumption (Vs)	3W					
Interface	EtherCAT slave					
Specification				EN 61131-2		
Diagnostic leds	Power	Run	Error	EtherCAT run	Link IN	Link OUT



MITROL[®] srl

EtherCAT IP module



DIGITAL INPUT/OUTPUT

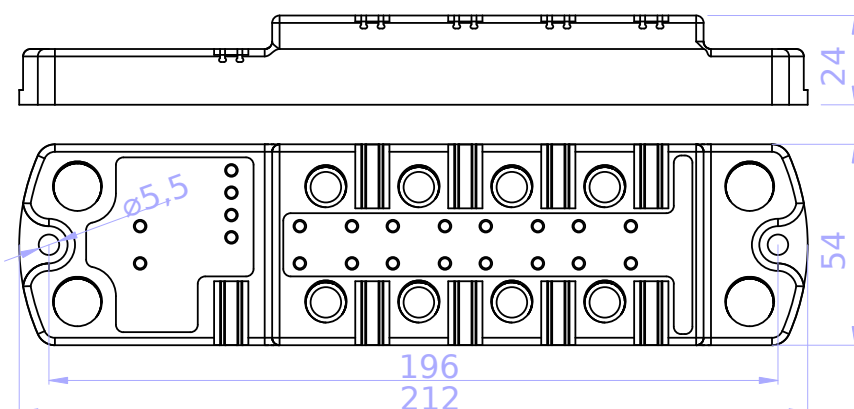
DB88IP - Version V1

Mechanical

Dimensions [W x H x D]	54x212x24mm without connectors
Installation	2 fixing holes 5mm for M4 (pitch 196mm) with metal pad connected to Earth

Environment

Operating/storage temperature	-20°C to 60°C / -20°C to 85°C
Relative humidity	Max 95% without condensation
Degree of protection	IP65



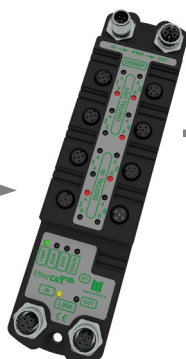
To facilitate wiring there are 9 standard label holders, one for each connector, plus one for the module name

NOTE: suggested label code
www.phoenixcontact.com
0801491



Application

Digital Input



Digital Output



MITROL[®] srl

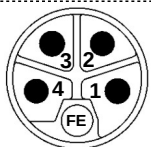
EtherCAT IP module



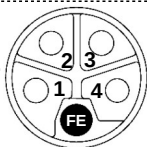
DIGITAL INPUT/OUTPUT

DB88IP - Version V1

Pin Assignments

Power supply
M12 L code

OUT

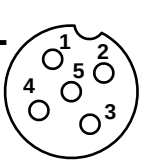


- 1 - GND Vp/Vs
- 2 - GND Vp/Vs
- 3 - 24Vs → for module and Dig. Inputs
- 4 - 24Vp → for Dig. Outputs
- FE - Earth

I/O connectors → M12 A code

PIN	Signal	LED
1	NC	
2	OUT 2	B
3	GND Vp/Vs	
4	OUT 1	A
5	Earth	

1



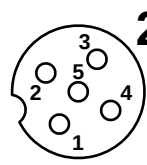
A

B

A

B

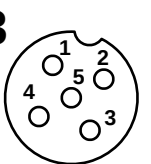
2



PIN	Signal	LED
1	NC	
2	OUT 4	B
3	GND Vp/Vs	
4	OUT 3	A
5	Earth	

PIN	Signal	LED
1	NC	
2	OUT 6	B
3	GND Vp/Vs	
4	OUT 5	A
5	Earth	

3



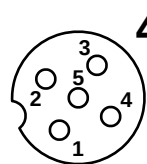
A

B

A

B

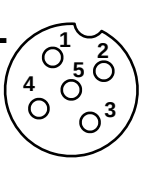
4



PIN	Signal	LED
1	NC	
2	OUT 8	B
3	GND Vp/Vs	
4	OUT 7	A
5	Earth	

PIN	Signal	LED
1	24Vs	
2	IN 2	B
3	GND Vp/Vs	
4	IN 1	A
5	Earth	

1



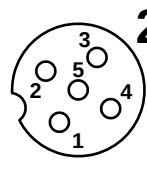
A

B

A

B

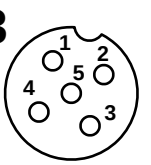
2



PIN	Signal	LED
1	24Vs	
2	IN 4	B
3	GND Vp/Vs	
4	IN 3	A
5	Earth	

PIN	Signal	LED
1	24Vs	
2	IN 6	B
3	GND Vp/Vs	
4	IN 5	A
5	Earth	

3



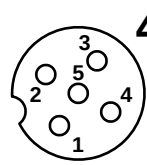
A

B

A

B

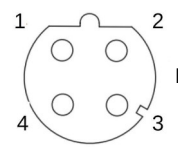
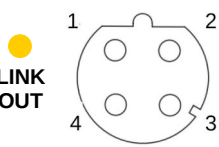
4



PIN	Signal	LED
1	24Vs	
2	IN 8	B
3	GND Vp/Vs	
4	IN 7	A
5	Earth	

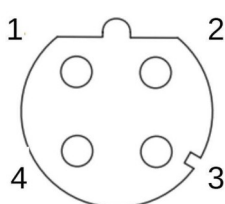
EtherCAT
M12 D code

- 1 - TD+
- 2 - RD+
- 3 - TD-
- 4 - RD-

LINK
INLINK
OUT

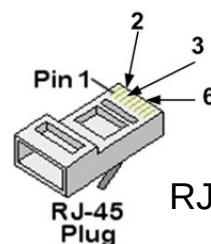
- 1 - TD+
 - 2 - RD+
 - 3 - TD-
 - 4 - RD-
- The metal bushing is connected to Earth

M12



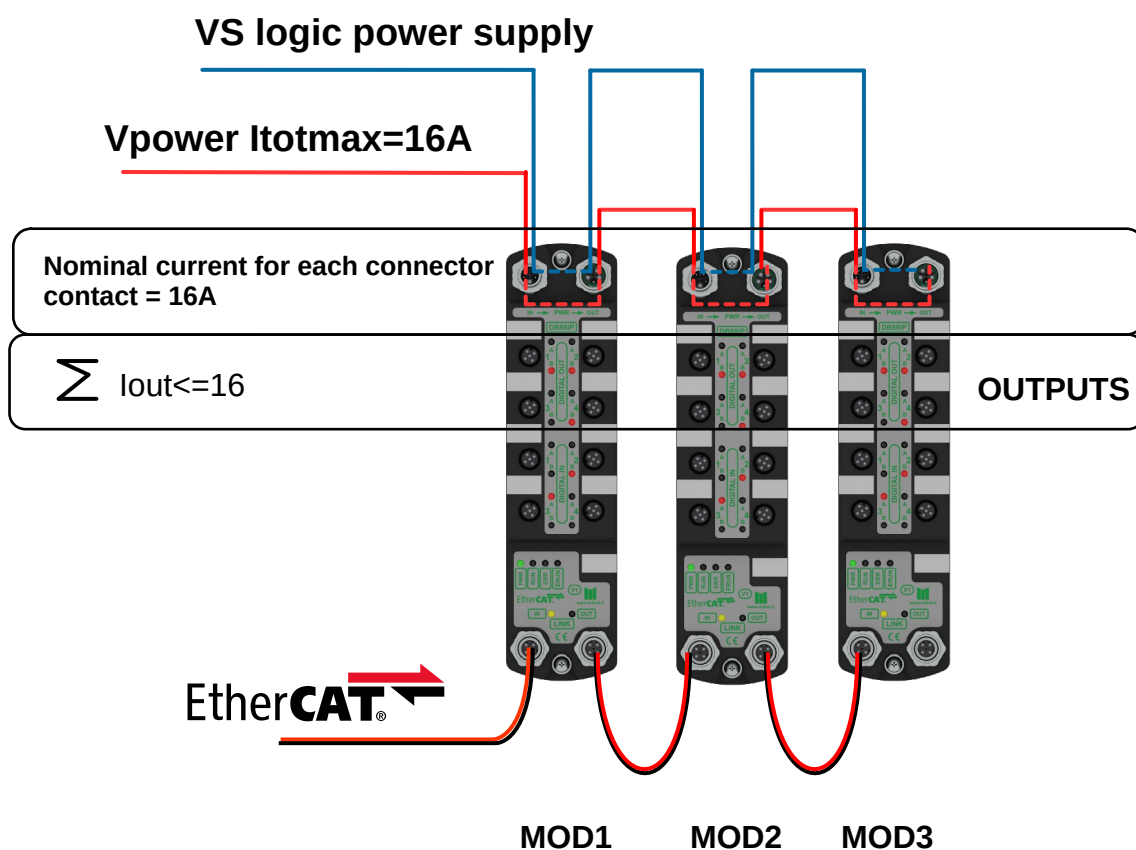
- 1.TD+ ——— YE - yellow
- 2.RD+ ——— WH - white
- 3.TD- ——— OG - orange
- 4.RD- ——— BU - blue

- 1.TX+
- 3.RX+
- 2.TX-
- 6.RX-



RJ45

Example: daisy chain connection for power supply



Max. current for each channels	Iout	2A
Total current for each single module (no daisy chain) <i>It is possible to drive, at the same time, all the channels (8) with the maximum current of 2 A.</i>	Itot	16A
Max total current for N modules in daisy chain connection. <i>It is not possible to drive, at the same time, all the channels (8xN) with the maximum current. The sum of all the current output must be < 16A.</i>	Itot	16A