ISO9001 Certified

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E

mod. IO-LB/MP-D1/16-16

M.I. IO-LB/MP-D1/16-16 - 0/08.06
Cod. J30-658-1AD1 16 16 E

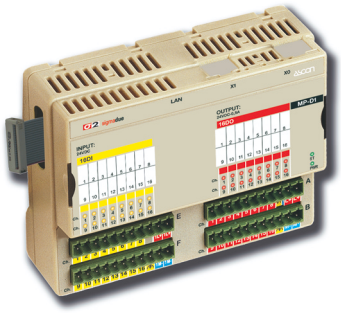
Installation Manual

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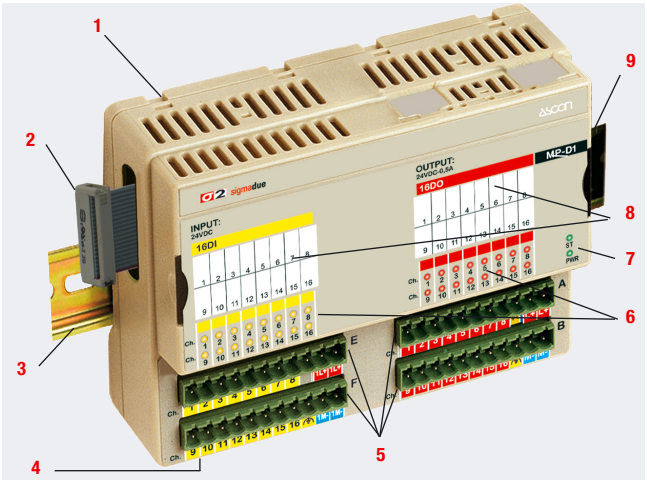
16 digital inputs and 16 digital outputs for the microPAC systems mod. IO/MP-D1/16-16

σ2 SERIES



This I/O module is connected to the microPAC CPU through a dedicated bus and expands the sytem by:
- Eight, 24 Vdc Digital Inputs;
- Eight, 24 Vdc Digital Outputs.

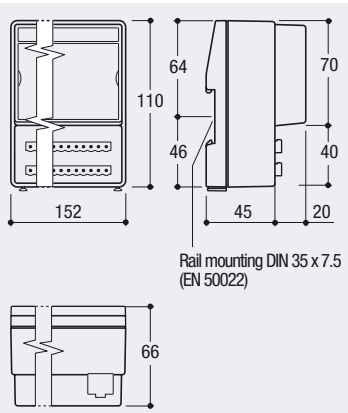
General description



1 - Model identification label (on the back side of the module);
2 - Bus to connect the CPU or the previous external I/O module;
3 - DIN RAIL 35 x 7.5 (EN50022);
4 - Slides to install an additional terminal block 2 x 11 poles (accessory);
5 - Male 11 poles plugs (**A**, **B**, **E** and **F**), pitch 5.0mm; the female 11 poles plugs have fast snap-ON connectors with screw or spring terminals to connect the power supply, the 16 digital Inputs and the 16 digital Outputs;
6 - I/Os status LEDs: 1...16 yellow LEDs, status of the 16 digital Inputs; 1...16 red LEDs, status of the 16 digital Outputs;
7 - Status green LEDs: **ST**: module status, **PWR**; power supply ON;
8 - Removable and writable label to identify the connected I/O (TAG number);
9 - Bus to connect the external I/O modules;

Installation

Dimensions (mm)



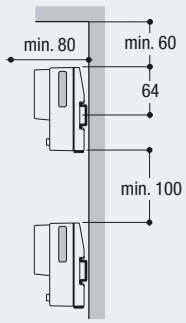
Operating conditions

Environmental condition		Suggestion
Operating conditions	Temperature 0...+50°C	
	Umidity 5...95% Rh non condensing	
Special conditions	Temperature > 50°C	Use forced ventilation
	> 95% RH	Warm up
	Conducting atmosphere	Use filter
Forbidden conditions	Corrosive atmosphere	
	Explosive atmosphere	

Mounting position

- Mount the module vertically;
- In order to help the ventilation flow of air, respect the distances between modules and walls or other modules.

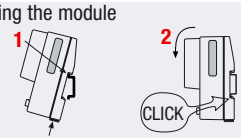
Mounting position (mm)



Mounting/removing the modules on/from the DIN rail

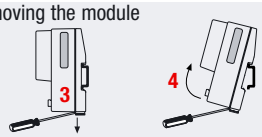
1 Close the spring slide, then clip the upper part of the module on the rail;
2 Rotate the module downwards till to the click.

Mounting the module



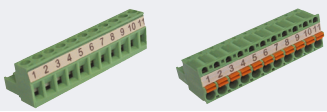
3 Switch OFF the Power Supply.
Lower the spring slide by inserting a flat-blade screwdriver as indicated;
4 Turn and lift the module upwards.

Removing the module

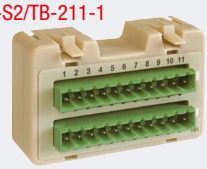


Accessories

11 poles connectors
With screw terminals: AP-S2/SPINA-V11
With spring terminals: AP-S2/SPINA-M11



Additional terminal block
AP-S2/TB-211-1



Power supply 45W - 2A/24 Vdc
AP-S2/AL-DR45-24



Power supply 120W - 5A/24Vdc
AP-S2/AL-DR120-24



Connecting the expansion modules

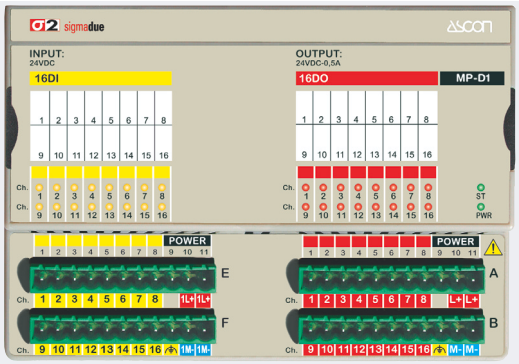
The I/O module are already set.
The I/O expansion modules must be mounted on the right of the last mounted module.
The maximum system configuration is: microPAC CPU + 2 expansion modules.
The modules (CPU included) must be powered OFF when connected to each other.
All the modules must be removed from the DIN rail before to connect or disconnect the expansion modules.

1 Switch OFF the Power Supply;
2 Insert the connector of the bus in the rightmost module. A position key identifies the insertion versus of the connector;
3 Mount the modules on the DIN rail.

To remove the I/O expansion modules invert the mounting sequence described.

Electrical connections

Terminals connections and plugs



Pin	Label	Signals
E1...E8	1...8	8 digital inputs (+ pole)
E9		Not connected
E10, E11	1L+	+24V power supply terminals
F1...F8	9...16	8 digital inputs (+ pole)
F9	⏚	Hearth terminal
E10, E11	1M-	0V power supply terminal

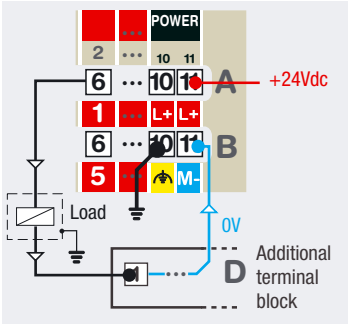
Pin	Label	Signals
A1...A8	1...8	8 digital inputs (+ pole)
A9		Not connected
A10, A11	L+	+24V power supply terminals
B1...B8	9...16	8 digital inputs (+ pole)
B9	⏚	Hearth terminal
B10, B11	M-	0V power supply terminal

Description	Plugs **A**, **B** terminals
Flexible cable section:	0.2...2.5 mm² (AWG24...AWG12)
Stripped wire	**Screw:** 7mm; **Spring:** 10mm
Flat blade screwdriver	0.6 x 3.5 mm
Tightening torque	0.5...0.6 Nm

Technical data:
- Four 11 poles plugs (**A**, **B**, **E** and **F**) pitch 5.0mm
- Made with self extinguishing material as required by UL94 V0 standard
- Overvoltage cathegory/pollution degree II/2
- Max. load current/section 8A/2.5mm² at 65°C
- Test pulse voltage: 4 kVp

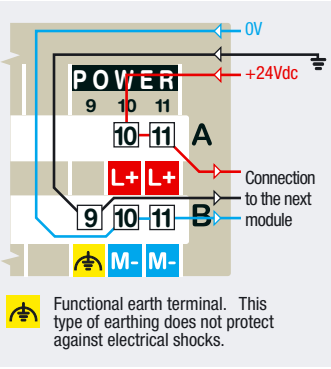
⚠ Please note that the maximum current capacity for each terminal is 8A.
⚠ Make sure that the overall current absorption (modules and field devices) matches the power supply.
⚠ In order to avoid excessive voltage drops, install the most power consuming modules closer to the power supply.

Digital Output 1...16 (PNP) Source Type



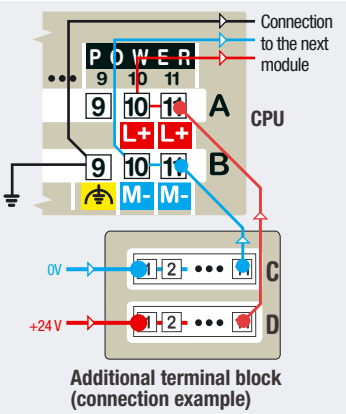
- 24 Vdc, 0.5A digital outputs;
- Respect the polarity;
- If the input device needs to be powered by the power terminals (A10 - A11 for +24 Vdc and B10 - B1 for 0V);
- When present, the shield must be connected to a proper earth (at only one end).

Power supply



⚠ The module does not need to be powered as its electronics are powered by the local bus. The 24Vdc powers the I/O.
- 24Vdc (–15...+25%), 5W max.
- The power supply terminals of each terminal block are internally connected (A10 to A11, E10 to E11 for +24Vdc also B10 to B11, F10 to F11 for 0V). If necessary the user can isolate the Inputs from the Outputs (with 2 different Power supplies) or use the extra terminals to power other I/O modules.

Additional terminal block TB-211-1



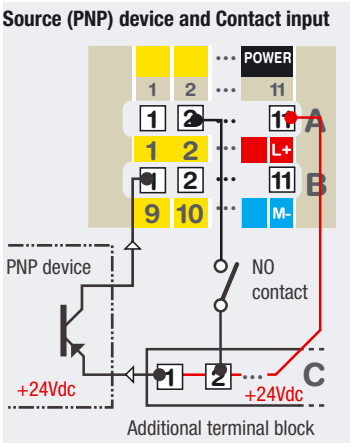
An additional terminal block can be installed on the I/O module using the two slides located in the lower part of the case.

The additional terminal block has no active components inside, only two 11 pitch 5.0mm contacts connectors.

All the 11 contacts of each connector (**C** and **D**) are internally connected and can be used to make multiple connections (see the example).

Digital Inputs 1...16 Type II (EN61131-2)

Source (PNP) device and Contact input



- Respect the polarity.
- When present the shield must be connected to a proper earth (at only one end);
- If the input devices need to be powered (terminals A10 - A11 for +24 Vdc and B10 - B1 for 0V).

CE Electric safety and electromagnetic compatibility

Class II instrument, rear panel mounting.
This instrument has been designed in compliance with:
Regulations on electrical equipment:
according to regulations on the essential protection requirements in electrical equipment EN 61010-1
Regulations on Electromagnetic Compatibility according to:
- Regulations on RF emissions: EN61000-6-4 industrial environments;
- Regulation on RF immunity: EN61000-6-2 industrial equipment and system.

It is important to understand that it's responsibility of the installer to ensure the compliance of the regulations on safety requirements and EMC.
This controller has no user serviceable parts and requires special equipments and specialised engineers to be repaired. For this purpose, the manufacturer provides technical assistance and the repair service for its Customers. Please, contact your nearest Agent for further information.
All the information and warnings about safety and electromagnetic compatibility are marked with the ⚠ CE sign, at the side of the note.

Before installing the module read the following instructions

Precautions ⚠ CE

All wirings must comply with the local regulations
- The supply wiring should be routed away from the power cables
- Avoid to use electromagnetic contactors, power relays and high power motors nearby
- Avoid power units nearby, especially if controlled in phase angle
- Keep the low level sensor input wires away from the power lines and the output cables. If this is not achievable, use shielded cables on the sensor input, with the shield connected to earth.

Notes

1 Make sure that the power supply voltage is the same indicated on the instrument label
2 Switch ON the power supply only after all the electrical connections have been completed