

## 2 digital inputs / 2 relay outputs module for 4 120 53

Cat. N°: 4 120 57



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### 1. DESCRIPTION - USE

2 digital inputs / 2 relay outputs module.  
Allows the monitoring of electrical quantities through two alarms; it allows also to display the status (open/closed), to count inputs and to count the energy on 2 tariffs, by 2 voltage-free inputs.  
Each module is equipped with two independent inputs and two independent relay outputs

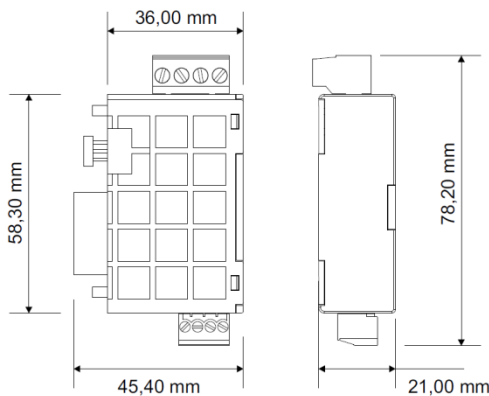
### 2. RANGE

. Cat. N° 4 120 57: 2 digital inputs / 2 relay outputs module;  
associable only to multifunction measuring device 4 120 53.  
. It is possible to connect a maximum of two modules 4 120 57 obtaining 4 inputs / 4 relay outputs.

### Auxiliary supply:

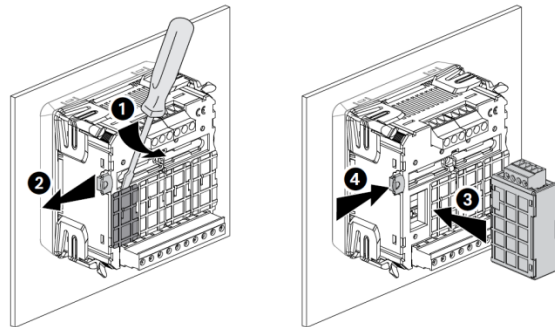
. Supplied by the multifunction measuring device 4 120 53

### 3. OVERALL DIMENSIONS



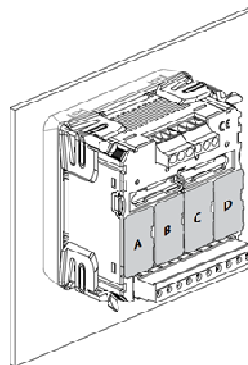
### 4. FIXING - CONNECTION

#### Fixing:



**Note:** modules must be connected with the device 4 120 53 not supplied.

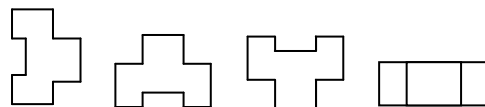
#### Associability table:



	A	B	C	D	
4 120 55	✓	x	x	x	max. 1
4 120 56	✓	x	x	x	max. 1
4 120 57	x	x	✓	✓	max. 2
4 120 58	x	x	x	✓	max. 1
4 120 59	✓	✓	✓	✓	max. 2
4 120 60	x	x	✓	✓	max. 2
4 120 61	x	✓	x	x	max. 1

#### Operating position:

. Vertical Horizontal Upside down On the side



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### 4. FIXING - CONNECTION *(continued)*

#### Screw terminals:

- . Terminal depth: 8 mm.
- . Stripping length: 8 mm

#### Screw head:

- . Screw slotted.

#### Recommended tightening torque:

- . 0,6 Nm.

#### Tools required:

- . For inputs terminals: flat screwdriver 2,5 mm
- . For outputs terminals: flat screwdriver 3,5 mm
- . For fixing the modules to the measuring device: flat screwdriver max. 5 mm.

#### Connectable section:

- . Copper cables.
- . Outputs terminals (6-7, 8-9)

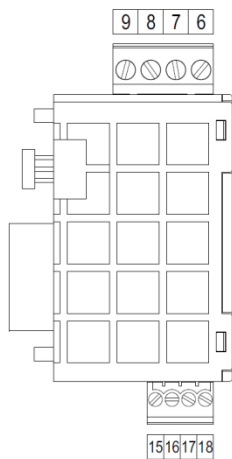
	Without ferrule	With ferrule
Rigid cable	<b>0,05 a 4,5 mm<sup>2</sup></b>	-
Flexible cable	<b>0,05 a 2,5 mm<sup>2</sup></b>	<b>0,05 a 2,5 mm<sup>2</sup></b>

- . Inputs terminals (15-16, 17-18)

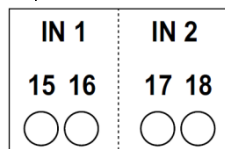
	Without ferrule	With ferrule
Rigid cable	<b>0,05 a 2,5 mm<sup>2</sup></b>	-
Flexible cable	<b>0,05 a 1,5 mm<sup>2</sup></b>	<b>0,05 a 1,5 mm<sup>2</sup></b>

#### Wiring diagrams:

- . Terminals identifications



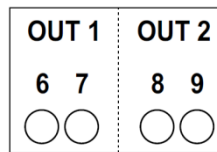
- . Wirings:  
Inputs



### 4. FIXING - CONNECTION *(continued)*

- . Wirings:

Outputs



### 5. GENERAL CHARACTERISTICS

#### Terminals marking:

- . By permanent ink pad printing.
- . Outputs terminal

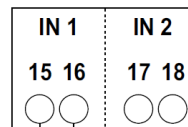


- . Inputs terminal



#### Digital inputs

- . 2 voltage-free digital inputs SPST
- . Features:
  - display of the input status (open/closed)
  - switching energy count on 2 tariffs (only input 15-16 of the module installed in the slot "C" - see § 4)
  - input pulse counting
- . 4 input terminals - 2 independent inputs
- . Input wiring:



i 1

i: voltage-free input

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### 5. GENERAL CHARACTERISTICS *(continued)*

#### Alarms output characteristics:

- . Potential-free SPST-NO contact relay
- . Voltage and Current:
  - max. 250 Va.c., 5 A @  $\cos\phi 1$ , 3 A @  $\cos\phi 0,4$
  - max. 30 Vd.c., 5A
- . Associable variables:
  - phase voltages,  $V_{1N}$ ,  $V_{2N}$ ,  $V_{3N}$
  - chained voltages,  $U_{12}$ ,  $U_{23}$ ,  $U_{31}$
  - phase currents,  $I_1$ ,  $I_2$ ,  $I_3$
  - average current
  - frequency,  $f$
  - three-phase active power (positive or negative),  $P$
  - phase active powers (positive or negative),  $P_1$ ,  $P_2$ ,  $P_3$
  - three-phase reactive power (positive or negative),  $Q$
  - phase reactive powers (positive or negative),  $Q_1$ ,  $Q_2$ ,  $Q_3$
  - active power - average value
  - reactive power - average value
  - lagging (PFL) or capacitive (PFC) power factor
  - temperature ( $T_1$ ,  $T_2$ ) from external probe (with module 4 120 58)
- . Programmable intervention threshold
- . Alarm type: high or low threshold
- . Relay run mode: normally open (NO) / normally closed (NC)
- . Hysteresis: 0÷20%
- . Intervention delay: 0÷99 sec.
- . Recovery delay: 0÷99 sec.

#### Output characteristics - Remote control via RS485:

- . Potential-free SPST-NO contact relay
- . Voltage and Current:
  - max. 250 Va.c., 5 A @  $\cos\phi 1$ , 3 A @  $\cos\phi 0,4$
  - max. 30 Vd.c., 5A
- . Control type:
  - bistable (rMtb)
  - temporized (rMtt)
- . Relay run mode: normally open (NO) / normally closed (NC)
- . Relay closing time: 0÷99 sec.

#### Plastic material:

- . Self-extinguishing polycarbonate.

#### Ambient operating temperature:

- . Min. = - 5 °C Max. = + 55 °C.

#### Ambient storage temperature:

- . Min. = - 25 °C Max. = + 70 °C.

#### Impulse withstand voltage:

- . Supply / Out 1 - Out 2:
  - alternate current 50 Hz / 1 min.: 2 kV
- . Measuring inputs / Out 1 - Out 2:
  - alternate current 50 Hz / 1 min.: 2 kV
- . Supply / Input 1 - Input 2:
  - alternate current 50 Hz / 1 min.: 2 kV
- . Measuring inputs / Input 1 - Input 2:
  - alternate current 50 Hz / 1 min.: 2 kV

**Note:** values referred to combination measuring device + add-on module.

#### Average weight per device:

- . 0,040 kg.

### 5. GENERAL CHARACTERISTICS *(continued)*

#### Volume when packed:

- . 0,30 dm<sup>3</sup>

#### Consumption:

- . Module 4 120 57: ≤ 1 VA
- . Measuring device 4 120 53 + 1 Module 4 120 57: ≤ 5 VA
- . Measuring device 4 120 53 + 2 Modules 4 120 57: ≤ 6 VA

### 6. COMPLIANCE AND APPROVALS

#### Compliance to standards:

- . Compliance with Directive on electromagnetic compatibility (EMC) n° 2004/108/EC
- . Compliance with low voltage directive no. 73/23/CEE dated 19 February 1973, modified by directive no. 93/68/CEE dated 22 July 1993, modified by directive n° 2006/95/CE.