

# Energy Management Fiber-optic converter Type SIU-FO1 and SIU-FO2

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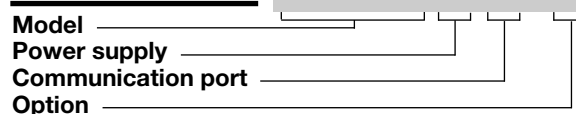
- SIU-FO1**
- RS485/RS232 to single loop fibre optic conversion SIU-FO2
  - RS485/RS232 to double loop fibre optic conversion

- All models**
- Communication speed selectable by means of dip-switches from 300 to 115200 bit/s
  - Power supply from 12 to 18VAC or from 10 to 24VDC
  - 4-DIN modules housing
  - For DIN-rail mounting

## Product Description

RS485 to Fiber-optic Bus converter. The unit is suitable, according to the model, to work with either single loop connection or double loop fiber-optic connection. The SIU-FO series has the task to convert the standard Mod-Bus communication from RS485 type to Fiber-optic so to increase the distance between devices and to increase significantly the noise immunity.

## How to order **SIU-FO1 1 S2 XX**



## Type Selection

Model, SIU-	Power supply	Communication port	XX
<b>FO1:</b> Serial single loop fibre optic conversion	<b>1:</b> 12 to 18VAC (48 to 62Hz) or 10 to 24VDC (*)	<b>XX:</b> none (*) <b>S1:</b> RS232 port (**) <b>S2:</b> RS485 port (*)	<b>XX:</b> none (*)
<b>FO2:</b> Serial double loop fibre optic conversion			

(\*) as standard.  
(\*\*) on request.

## Communication

<b>RS485 port</b>			
Type	Multidrop, bidirectional (static and dynamic variables)	Data format	Selectable by means of dip-switches: - 1 start bit, - 8 data bit, - none, even, odd parity
Connections	2-wire + GND Max. distance 1000m, termination directly on the module	Delay	Selectable by means of dip-switches: 1 or 2ms.
LED	Green: running communication (one LED per loop) Yellow: reset status	Baud-rate	Selectable by means of dip-switches: 300, 600, 1.2k, 2.4k, 4.8k, 9.6k, 19.2k, 38.4k, 57.6k, 115.2k bit/s
Addresses	247, automatically managed by the unit	Driver input capability	1/5 unit load. Maximum 160 transceivers on the same bus.
Protocol		Insulation	See "Insulation between inputs and outputs" table.
Data (bidirectional)	MODBUS/JBUS (RTU)		
Dynamic (reading only)	All data		
Static (reading and writing only)	All data		



## Communication (cont.)

<b>RS232 output (on request)</b>	Bidirectional (static and dynamic variables) 2-wire + GND Max. distance 15m, termination directly on the module		19.2k, 38.4k, 57.6k, 115.2k bit/s See "Insulation between inputs and outputs" table.
Connections		Insulation	
LED	Green: running communication (one LED per loop) Yellow: reset status	<b>Optical fiber port</b>	
Addresses	1	Type	Multimode fiber optic ST / BFOC type
Protocol		Connections	Bayonet coupling nut Ceramic or metal ferrule with Ø 2.5 mm
Data (bidirectional)	MODBUS/JBUS (RTU)	LED	Green: running communication IEC 61754-2
Dynamic (reading only)	All data	Standard compliance	Max. 800m with multimode fiber (MM) 50/125 µm Max. 2000m with multimode fiber (MM) 62.5/125 µm
Static (reading and writing only)	All data	Distance	Normal: wire to fiber optic and fiber optic to wire conversion Boot: for firmware upgrading
Data format	Selectable by means of dip-switches: - 1 start bit, - 8 data bit, - none, even, odd parity - 1 or 2 stop bits	Working mode	
Delay	Selectable by means of dip-switches: 1 or 2ms.		
Baud-rate	Selectable by means of dip-switches: 300, 600, 1.2k, 2.4k, 4.8k, 9.6k,		

## General specifications

<b>Operating temperature</b>	-25 to +60°C (-13°F to 131°F) (R.H. from 0 to 90% non-condensing @ 40°C)	<b>Fiber optic connections</b>	Type	BFOC for Ceramic or metal ferrule with Ø 2.5 mm
<b>Storage temperature</b>	-30 to +70°C (-22°F to 140°F) (R.H. < 90% non-condensing @ 40°C)	<b>Housing</b>	Dimensions (WxHxD)	71 x 95 x 60mm.
<b>Installation category</b>	Cat. III (IEC60664, EN60664)	Material		ABS, self-extinguishing: UL 94 V-0
<b>Insulation (for 1 minute)</b>	See "Insulation between inputs and outputs" table	Mounting		DIN-rail mounting
<b>Dielectric strength</b>	4kVAC RMS for 1 minute	<b>Protection degree</b>	Front	IP50
<b>Standard compliance</b>		Screw terminals		IP20
EMC	CE requirements	<b>Weight</b>		Approx. 200 g (packing included)
Safety	CE requirements			
<b>Approvals</b>	CE			
<b>Wired connections</b>	Screw-type			
Cable cross-section area	max. 2.5 mm <sup>2</sup>			

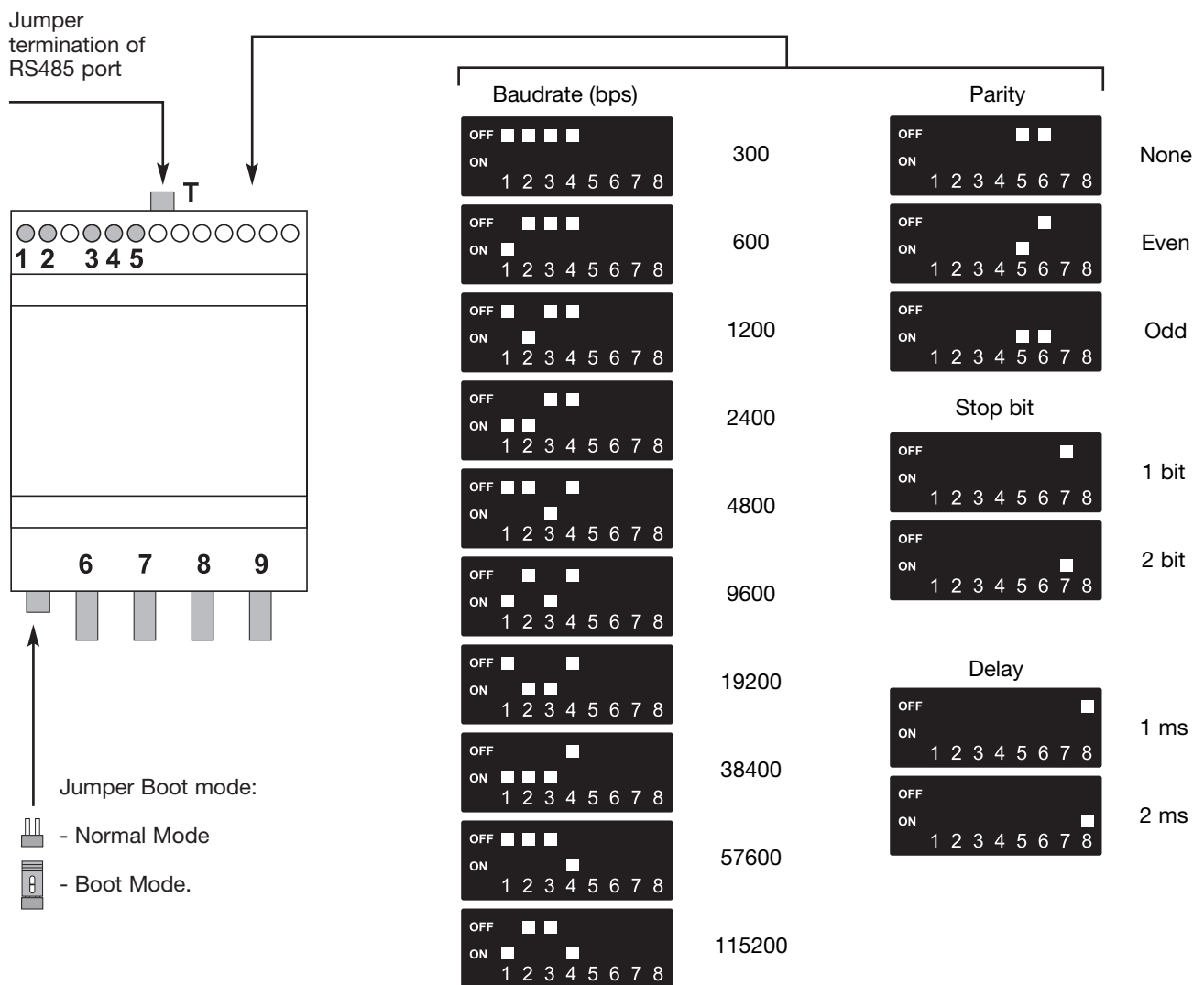
## Power supply specifications

<b>Auxiliary power supply</b>	12 to 18 VAC, 48/62 Hz 10 to 24 VDC	<b>Power consumption</b>	AC: 3 VA DC: 2.5 W
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## Insulation between inputs and outputs

	RS485 port	RS232 port	Optical fiber port	Auxiliary power supply
RS485 port	-	4kV	4kV	4kV
RS232 port	4kV	-	4kV	4kV
Optical fiber port	4kV	4kV	-	4kV
Auxiliary power supply	4kV	4kV	4kV	-

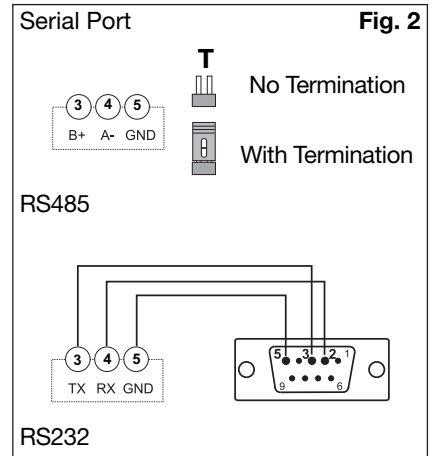
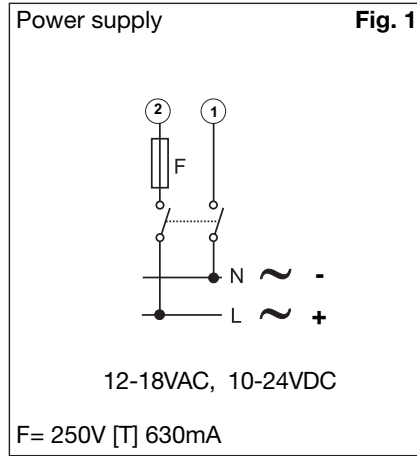
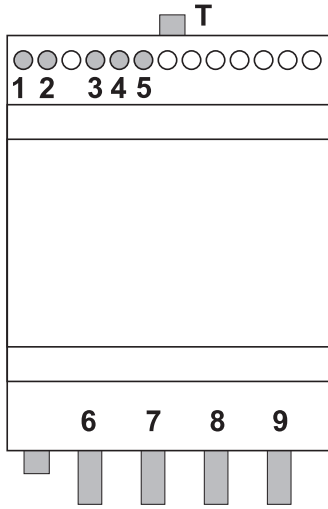
## SIU-FO1 single loop and SIU-FO2 double loop setting



**NOTE:** the setting of the converter or following modifications must be done always with switched off converter.



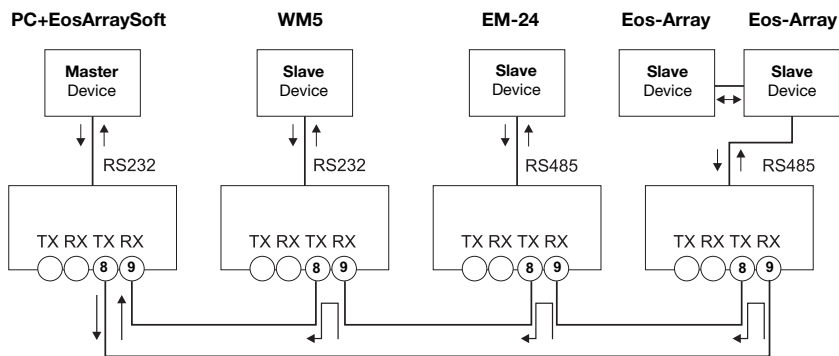
## SIU-FO1 and SIU-FO2 connections



**RS485 NOTE:** the termination of the serial output is carried out only on the last instrument of the network, by means of the jumper.

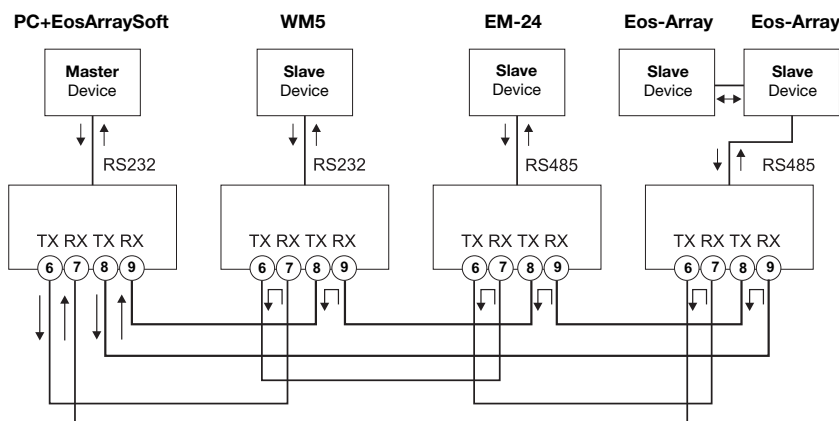
SIU-FO1 single loop fiber optic connection

**Fig. 3**

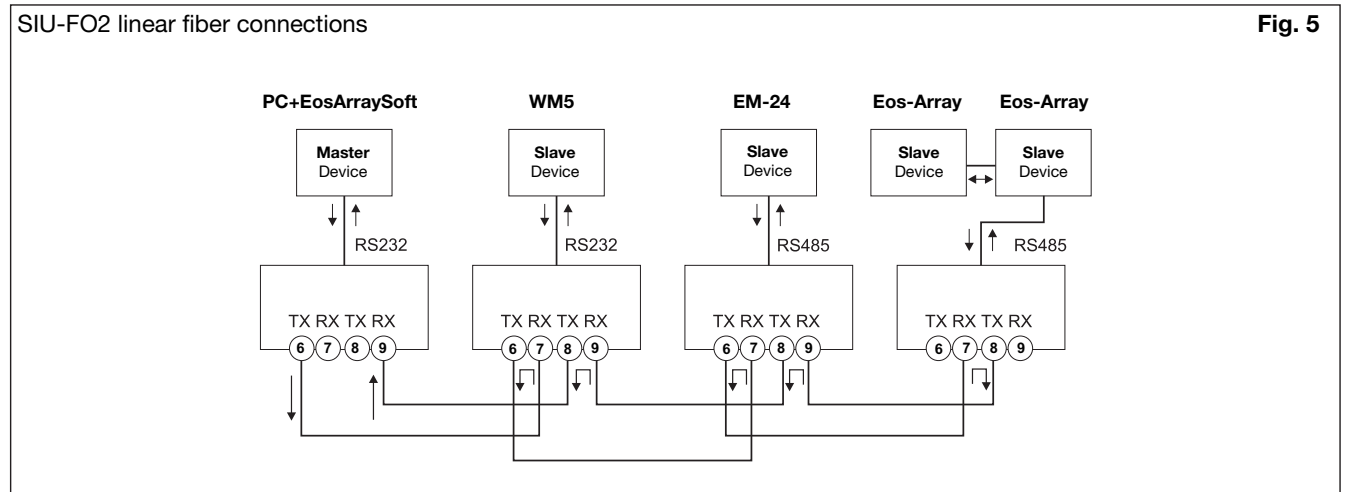


SIU-FO2 double loop fiber connections

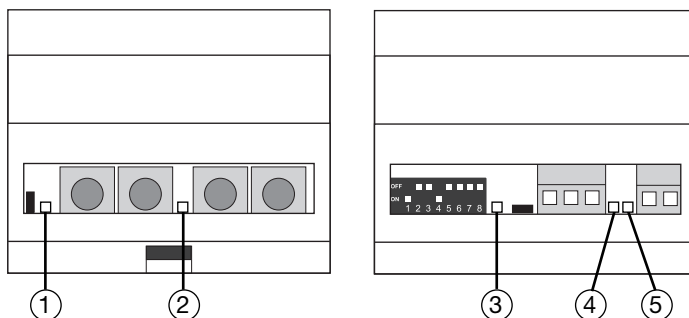
**Fig. 4**



## SIU-FO1 and SIU-FO2 connections (cont.)



## SIU-FO1 and SIU-FO2 SMD LEDs description



1. Green LED: optic fibres 02, working communication. Only in double loop version (FO2).
2. Green LED: optic fibres 01, working communication.
3. Green LED: power supplied (blinking).
4. Yellow LED: reset.
5. Green LED: RS485 communication.

## Dimensions

