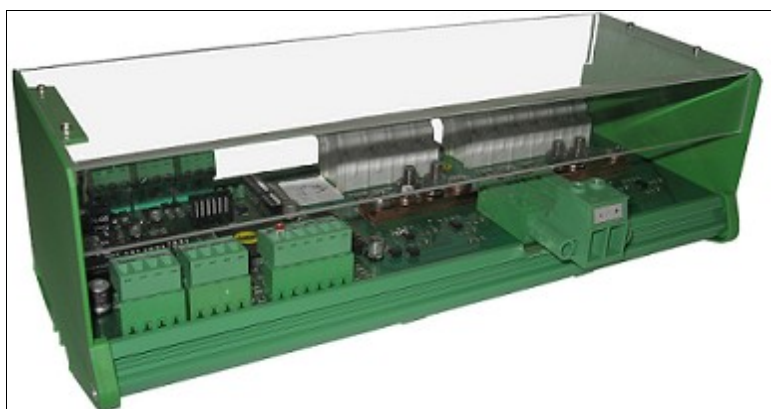




ST Series

4 / 6 / 8 / 10 / 14 / 16 / 24 CHANNELS



Control strings board

The ST series modules to string control, allow to monitoring current and voltage generated from photovoltaic panels. Typically in a panels system, each string is composed by 15 ÷ 25 panel connected in series with a positive pole connected to each other. Each string's negative pole has carried to the dedicated input. Each channel can read a maximum current of 30A. The current reading is made by two parallel resistors and a copper bar connect all the negative poles, thus creating a common 0V. The ST series modules also have two digital inputs and four analog inputs. In particular, two analog inputs are dedicated respectively one at the switchboard's temperature reading and the second one to the solarimeter reading. The digital inputs allow to read the power disconnect switch status and the docker status. Is possible communicate with the board with a RS485 connection. Throught the Modbus RTU protocol, or with the Kernel Sistemi protocol, is possible monitoring all the physical quantities measured (temperature, solar intensity, current, digital input state, etc...).

- Current and voltage monitoring.
- Immediate control of the whole photovoltaics system.
- Switchboard temperature and board temperature monitoring.
- Solar intensity monitoring throught solarimeter input.
- Modbus RTU communication protocol.

ELECTRIC CHARACTERISTICS	
Power supply voltage	24Vdc \pm 5%
Power consumption	< 3 W
Microprocessor	Fujitsu MB91467 @ 100MHz
Number of monitored strings	4; 6; 8; 10; 14; 16; 24
Maximum common voltage	1000V with accuracy better than 3%
Maximum current for each string	30A



Measurement range	0...240A
Communication	Modbus RTU (RS485 / RS487)
Digital inputs	2 inputs 24Vdc
Analog inputs	4 analog inputs. 2 for PT100, 1 current input (0...20mA) and 1 voltage input (0...100mV)

MECHANICAL CHARACTERISTICS	
Operating temperature range	From -10 to +70 °C
Operating atmosphere	Free from corrosive gases
ID Address	Defined by dip-switchs
Size	4 Channels : 128 x 210,0mm 6 Channels : 128 x 219,3mm 8 Channels : 128 x 261,6mm 10 Channels : 128 x 292,5mm 14 Channels : 128 x 335,5mm 16 Channels : 128 x 362 mm

RESOURCES	
Quantity	Type
N°2	PT100 input (from 0 to 300 °C) for temperature reading, with accuracy better than 3%.
N°1	Sensor on board for reading switchboard temperature (accuracy better than 5%).
N°1	Analog input from 0 to 100mV or from 0...10V, typically to solarimeter connection.
N°1	Auxiliary input from 0 to 20mA with accuracy better than 3%.
N°2	PNP 24Vdc digital inputs, typically used for dockers connection or other devices.
N°2	Serial ports RS485. COM1 and COM2. COM1: this serial port is used to connect different "ST1 string controller" in a network or to PC. Is possible select through dip-switchs on board, the communication characteristics (node address, baud rate, parity, and communication protocol, which can be Modbus RTU or Kernel). This COM is divided in two connectors to facilitate the wiring. COM2: allow to connect I/O expansions modules Kernel Sistemi.
N°4; 6; 8; 10; 14; 16; 24	The board can manage the current reading of 4; 6; 8; 10; 14; 16; 24 strings (depending on the model) with accuracy better than 3%.