Kernel sistemi

ALLTRONIX

www.alltronix.com

STRING MONITORING UNITS FOR COMBINER BOX

Reliable and accurate solutions for monitoring of Utility Scale Solar Plant
Solutions using Shunt and Hall sensors
with Data transmission via RS485, Optical Fibre and Wireless.
Common Voltage measure upto 1500VDC
Modbus RTU, IEC-60870, Kernel and custom communication protocols
Models from 15Amps to 300Amps per channel
Operating Temperature from -40^{0}C to +85^{0}C
Fully complaint with IEC 61724-1 : 2021 Class A

SHUNT AND HALL EFFECT SENSOR SMU

ST0N and ST2N Series
Shunt Technology
SMU for 8, 12, 16, 20, 24 and 32 strings

MAIN FEATURES

- Recommended for new solar plants
- Current measurement on negative of the strings
- Big accurancy
- Very low temperature drift
- String parallel busbar on board
- Low consumption
- Current measurement from 15 to 40 Amps
- SMU for 8, 12, 16, 20 and 24 strings
- Available with RS485 serial
- Available for optical fiber single ring and for multidrop with redundancy networks
- Available for sub-Giga Narrow-band wireless Mesh

ST0HS Series
Hall Effect Sensors Technology
SMU for 8, 12, 16, 20 and 24 strings

MAIN FEATURES

- Suitable for both new solar plants and for retrofit of existing solar plants not monitored or without working monitoring
- Current measurement on both positive and negative side of the strings
- Absence of busbar
- Measurement of the passing current without interruption of the string cables
- Current measurement from 25 AMps to 300 Amps
- SMU for 2, 4, 8, 12, 16, 20 and 24 strings
- Available with RS485 network
- Available for optical fiber single ring and for multidrop with redundancy networks
- Available for sub-Giga Narrow-band wireless Mesh

ST SERIES - SOLAR STRING MONITORING UNITS

ST0N

FEATURES

Power supply	24Vdc max 3 W
Number of monitored strings	8, 12, 16, 20 or 24
Max. common voltage	1500V with 0,5% precision on full scale
Max. current for each string	8, 12, 16, 20 ch.= 25A --- 24 ch.= 15A
Range of measurement (A)	8 ch. / 12 ch. / 16 ch.: 0...200 / 0...300 / 0...400 20 ch. / 24 ch.: 0...500 / 0...360
Communication	RS485, Optical Fiber, wireless
Digital inputs	2
Analog inputs	1 PT100 input
SMB temperature measurement	With solid state temperature sensor on board
Working temperature's range	From -40 °C to +85 °C
Working atmosphere	Without corrosive gas
Temperature's drift -40°C÷85°C	Better than 60 mA at 12,5A
Current reading accuracy	Better than 0,15%
Current reading precision	Typical 0,5%
Size (mm)	8 ch. / 12 ch. / 16 ch.: 212,9x128 / 253,8x128 / 253,8x128 20 ch. / 24 ch.: 284x128 / 304x128
Working humidity	Lower 95% without condensation

ST2N

FEATURES

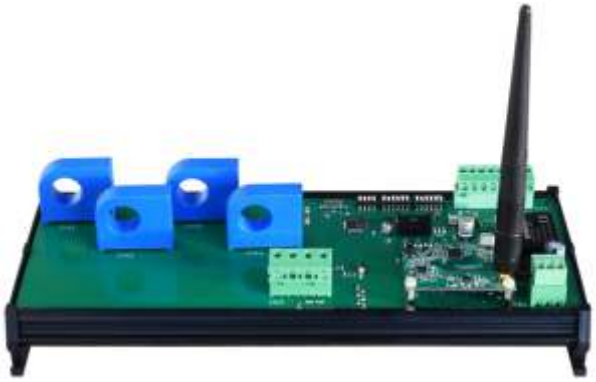
Power supply	24Vdc max 3 W
Number of monitored strings	8, 12, 16 or 24
Max. common voltage	1500V with 0,5% precision on full scale
Max. current for each string	8, 12 ch.= 40A; 16 ch.= 35A; 24 ch.= 25A
Range of measurement (A)	8 ch. / 12 ch. / 16 ch.: 0...320 / 0...480 / 0...560 24 ch.: 0...600
Communication	RS485, Optical Fiber, Wireless
Digital inputs	4
Analog inputs	1 PT100 input, 1 current input (0...20mA) and 1 voltage input (0...10V)
SMB temperature measurement	With solid state temperature sensor on board
Working temperature's range	From -40 °C to +85 °C
Working atmosphere	Without corrosive gas
Temperature's drift -40°C÷85°C	Better than 60mA at 25A
Current reading accuracy	Better than 0,15%
Current reading precision	Typical 0,5%
Size (mm)	8 ch. / 12 ch. / 16 ch.: 212,9x128 / 254x128 / 283,7x128 24 ch.: 342x128
Working humidity	Lower 95% without condensation

ST0HS SERIES - SOLAR STRING MONITORING UNITS

ST0HS 25-45-60 Amps

FEATURES	
Power supply	24Vdc lower then 3 W
Number of monitored strings	8, 12, 16, 20 or 24
Max. common voltage	1500V with 0,5% precision on full scale
Max. current for each string	25A - 45A - 60A
Range of measurement (A)	8, 12, 16, 20 or 24 ch with 25A 8, 12, 16, 20 or 24 ch with 45A 8, 12, 16, 20 or 24 ch with 60A
Communication	RS485, Optical Fiber, Wireless
Digital inputs	2
Analog inputs	1 PT100 input
SMB temperature measurement	With solid state temperature sensor on board
Working temperature's range	From -40 °C to +85 °C
Working atmosphere	Without corrosive gas
Temperature's drift -20°C÷80°C	120-300 mA
Current reading accuracy	Better than 0,3%
Current reading precision	Typical 1%
Size (mm)	8 ch. 213x128 / 12 ch. 253,8x128 / 16 ch. 248x128 20 ch. 342x128 / 24 ch. 348x128
Working humidity	Lower 95% without condensation

ST0HS 100-200-300 Amps



FEATURES	
Power supply	24Vdc lower then 3 W
Number of monitored strings	2, 4 or 6
Max. common voltage	1500V with 0,5% precision on full scale
Max. current for each string	100A - 200A - 300A
Range of measurement (A)	2, 4 or 6 ch with 100A 2, 4 or 6 ch with 200A 2, 4 or 6 ch with 300A
Communication	RS485, Optical Fiber, Wireless
Digital inputs	2
Analog inputs	1 PT100 input
SMB temperature measurement	With solid state temperature sensor on board
Working temperature's range	From -40 °C to +85 °C
Working atmosphere	Without corrosive gas
Temperature's drift -20°C÷80°C	0,50/1,5 A
Current reading accuracy	Better than 0,3%
Current reading precision	Typical 1%
Size (mm)	8 ch. 283,7x128 / 12 ch. 283,7x128 / 16 ch. 342x128
Working humidity	Lower 95% without condensation

ACCESSORIES

FB2485H

SERIAL RS485 TO OPTICAL FIBER CONVERTER

- Connection with SMUs KERNEL with OFC interface
- Connection to dataloggers or SCADA with rs485
- The same protocol used from SMUs KERNEL
- 24 VDC power supply
- Dip-switch for network selection between single ring or multidrop networks
- DIN rail mounting

IT15

DC DC CONVERTER IT15 SERIES

- Input from 200 VDC to 1500 VDC
- Output 24 VDC 15 Watt power
- Insulation 4 KV DC
- DIN rail mounting

Flex

FLEX SERIES POWER SUPPLY FOR FLEX6024A

- Input 90 / 260 VAC
- Output 24 VDC up 3 Amps
- Insulation 3KV AC
- DIN rail mounting

UR232

USB CONVERTER UR232

- 485SEN for conversion rs485 to USB
- UR232 for conversion rs232 to USB
- Insulation more than 500VAC from input/output
- Power supply from USB

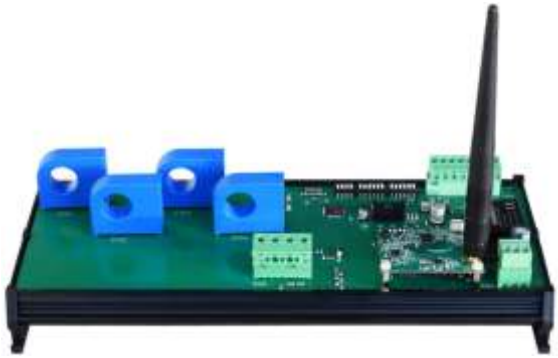
MODBUS RTU, IEC60870 AND CUSTOMIZED PROTOCOLS

RS485: THE ECONOMIC AND RELIABLE SOLUTION

- It's possible connect up to a maximum of **128** slaves
- 3 Wire connection: TX + RX + GND for the stabilization of the static potentials
- Surge and electrostatic discharge protection up to **16** KV
- Static potential protection from **-70** to **+70 V**
- Serial repetition on the same terminal block for a fast installation
- Galvanic isolation to potentials of the strings and power supply

WIRELESS:

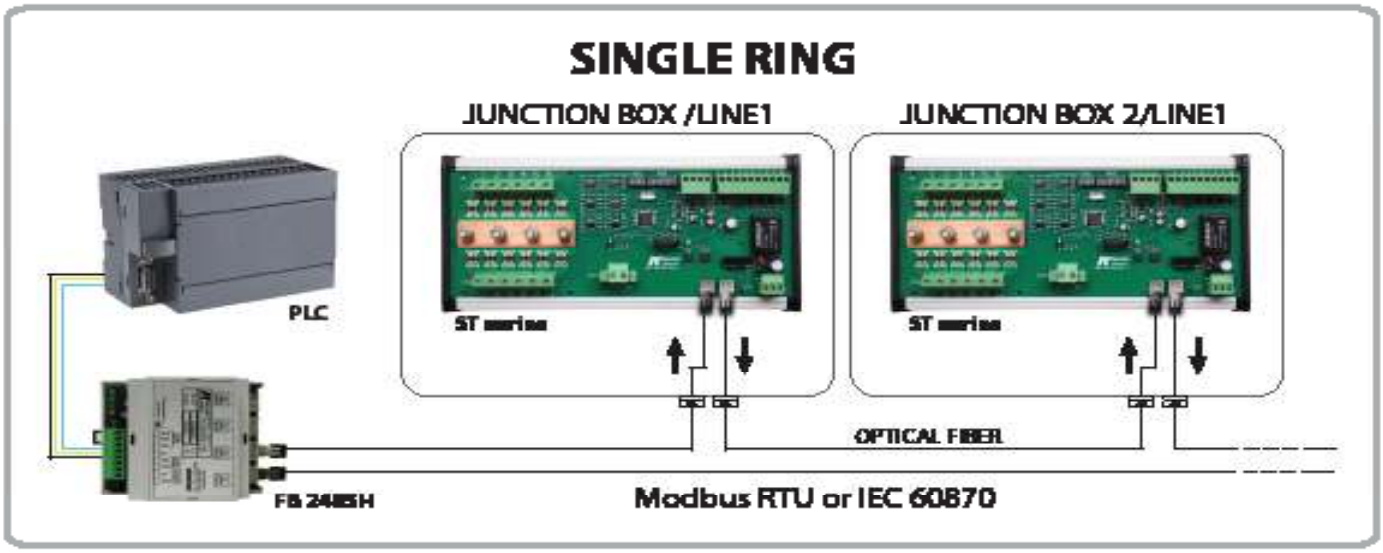
- Subgiga frequency
- Mesh technology
- Up 64 slaves connected
- Both shunt and hall sensors Kernel SMUs series are available with wireless communication
- Very fast wireless communication set-up

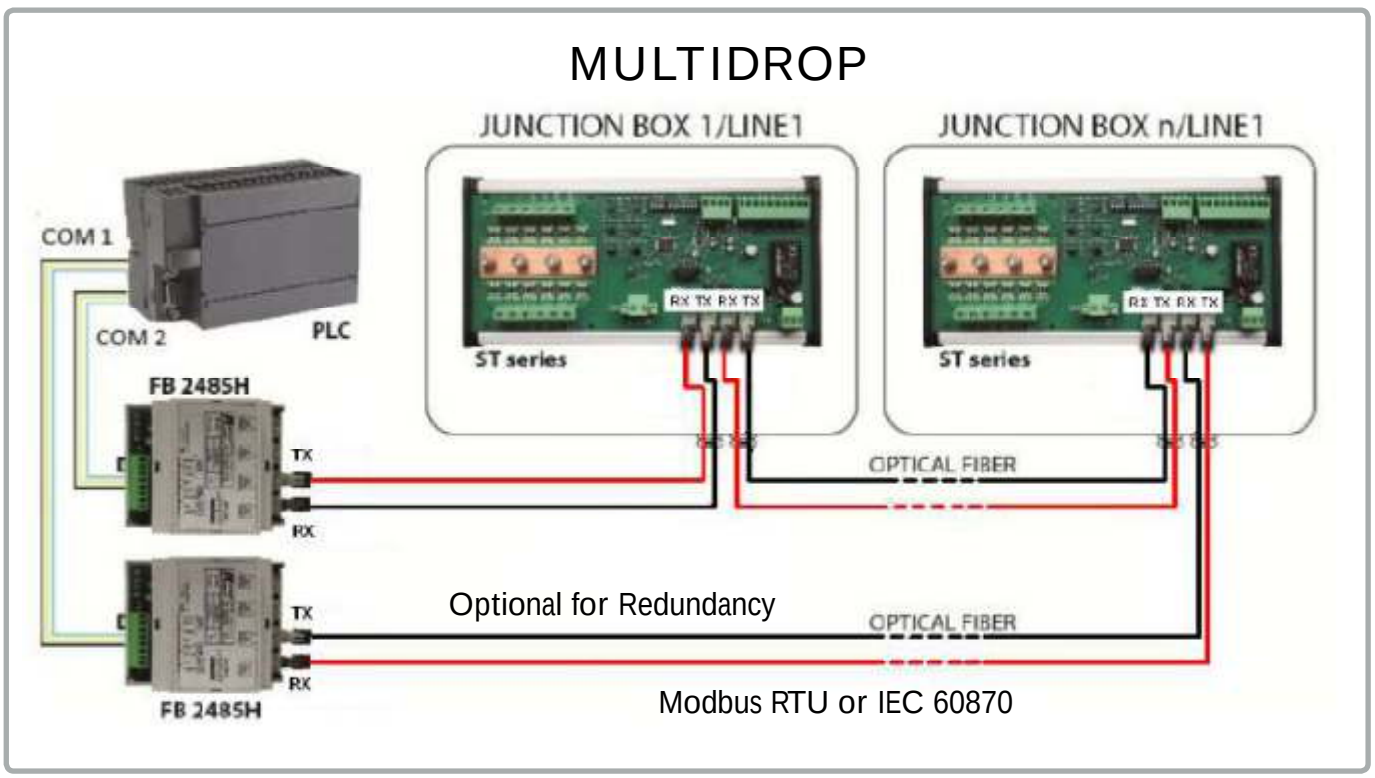


MODBUS RTU, IEC60870 AND CUSTOMIZED PROTOCOLS

OPTICAL FIBER: THE SOLUTION FOR DIFFICULT ENVIRONMENTAL CONDITIONS

- Use of multimode optical fiber standard OM2 standard or higher 50/125, 62,5/125
- Connection realization in single ring and double ring or multidrop with redundancy
- Maximum distance guarantees few kilometers without optical signal regeneration
- Regeneration of the optical signal inside each SMU or of the FB2485H converter to have virtually infinite length of the ring
- SPD devices not required, because optical fibers are connected directly to the board, without any kind of converter





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