kıntech engineering

Solar Panel Isc/Voc Sensor

Isc range: 0-20A
Voc range: 0-60V
Power supply: 11.5-30V

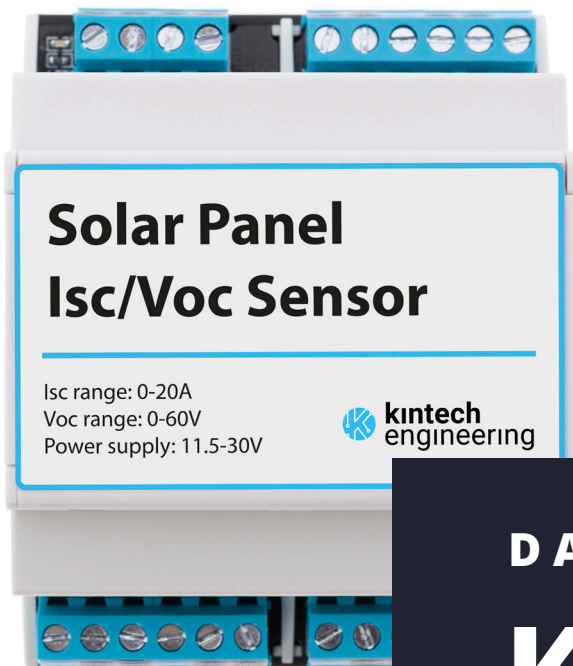**kıntech engineering**

KT Isc & Voc
SOLAR PANEL SENSOR

The KT ISC & VOC Solar Panel sensor is developed and manufactured by Kintech Engineering specifically for solar resource assessment applications

ISC / VOC SOLAR PANEL SENSOR | OTHER SOLAR

DESCRIPTION

The KT ISC & VOC Solar Panel sensor is developed and manufactured by Kintech Engineering specifically for solar resource assessment applications. It is specifically designed for soiling measurements and is able to measure Isc and Voc using a single solar panel. The sensor consists of two solar panels inputs in order to measure Isc and Voc from both soil and clean solar panels and can be used with high-power solar panels.

APPLICATIONS

Solar resource assessment, solar monitoring, soiling measurements. The Isc output can be used for irradiance calculations whereas the Voc output can be used for cell temperature calculations. The combination of both Isc and Voc outputs can be used to estimate the solar power.

FEATURES

General

Supply voltage	11.5...30 V (DC)
Average current consumption	10mA @ 24V
Peak current consumption	500mA @ 24V
Operating temperature	-30...+70ºC
Storage temperature	-30...+85ºC
Dimension	72 mm x 89.7 mm x 62.2 mm
Mounting	Standard DIN Rail
IP	IP10
Compatibility	All Kintech Engineering data loggers
Manufacturer	Kintech Engineering
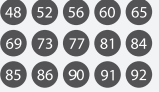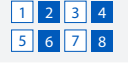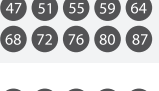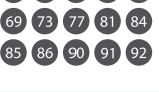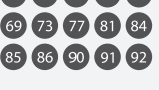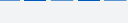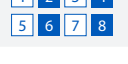
Isc measurement

Isc input range	0..20A
Accuracy	0.1%
Analog Isc Output	0...5V
Transfer function	Slope: 4, Offset: 0

Voc measurement

Voc input range	0..60V
Accuracy	0.1%
Analog Voc Output	0...5V
Transfer function	Slope: 12, Offset: 0

For more information please contact **web@kintech-engineering.com**
or visit our website **www.kintech-engineering.com**

Kıntech engineering

ISC / VOC SOLAR PANEL SENSOR | OTHER SOLAR

SENSOR WIRING TABLE

Pin Description		Orbit 360			EOL Zenith	
		Section	Terminal	Type	Section	Type
PV+	(+) PV panel 1					
PV-	(-) PV panel 1					
PV+	(+) PV panel 2					
PV-	(-) PV panel 2					
+	Power supply (+)	Power Input	⊕		BAT	+
GND	Power supply (-)	Power Input	(-)		BAT	−
ISC	Short-circuit Intensity 1	Analog Channels	48 52 56 60 65 69 73 77 81 84 85 86 90 91 92	Signal	Analog Inputs / Extra Analog	1 2 3 4 5 / 1 2 3 4 5 6 7 8
VOC	Open-circuit Voltage 1	Analog Channels	48 52 56 60 65 69 73 77 81 84 85 86 90 91 92	Signal	Analog Inputs / Extra Analog	1 2 3 4 5 / 1 2 3 4 5 6 7 8
REF	Reference	Analog Channels	47 51 55 59 64 68 72 76 80 87	(-)	Analog Inputs	− −
ISC2	Short-circuit Intensity 2	Analog Channels	48 52 56 60 65 69 73 77 81 84 85 86 90 91 92	Signal	Analog Inputs / Extra Analog	1 2 3 4 5 / 1 2 3 4 5 6 7 8
VOC2	Open-circuit Voltage 2	Analog Channels	48 52 56 60 65 69 73 77 81 84 85 86 90 91 92	Signal	Analog Inputs / Extra Analog	1 2 3 4 5 / 1 2 3 4 5 6 7 8
GND	GND					

Note 1: *ISC1 and VOC1 are measured from the PV panel located in the left side (from top view). ISC2 and VOC2 are measured from the panel located on the right side (from top view).*

Note 2: *Power supply must be in the range 11.5...30VDC and it has to be able to supply peaks of 500mA.*

REQUIRED DATA LOGGER VERSION

Minimum data logger required: **ORBIT 360 BASIC PLUS**.
Minimum **firmware** required: **any**.

Kintech engineering

ISC / VOC SOLAR PANEL SENSOR | OTHER SOLAR

HOW TO CONFIGURE IN ATLAS

Start Atlas and open the data logger you are working on. Now go to Site settings and scroll down to the Channels section and select the following type and model:

ISC
- Group: Analog channels
- Sensor Type: Voltage
- Sensor Model: **Volts**
- Slope: 4
- Offset: 0

ISC2
- Group: Analog channels
- Sensor Type: Voltage
- Sensor Model: **Volts**
- Slope: 4
- Offset: 0

VOC
- Group: Analog channels
- Sensor Type: Voltage
- Sensor Model: **Volts**
- Slope: 12
- Offset: 0

VOC2
- Group: Analog channels
- Sensor Type: Voltage
- Sensor Model: **Volts**
- Slope: 12
- Offset: 0

Important! Please make sure you are working with the latest version of Atlas. To check for new updates click the Check for updates button in the left-hand menu located in the main dashboard.

HOW TO CONFIGURE THIS SENSOR ON SITE

We recommend performing the entire sensor configuration using Atlas at the office before installing sensors onsite. Once the sensor is correctly setup in Atlas, use the Upload settings tool, to upload the sensor configuration to the data logger.
In case you are already on site and need to configure the sensor directly on the data logger, follow these steps:

1. Turn on the data logger.
2. Using the keypad on the data logger, navigate the menu until you see Sensor model, then click the "right arrow" on the keypad.
3. Now scroll down to the channel you are going to connect the sensor to, and click the "right arrow" on the keypad.
4. Now click "Set" on the keypad and scroll up in the menu to set the sensor model type according to the table here below. Once you have found the correct sensor model, click the "right arrow" key twice to select it and save.
5. Click the "left arrow" several times to go back to the main menu.

Data logger model	Firmware version	Sensor model type on data logger		
		Magnitude	Number	Name
ORBIT 360	any	ISC / ISC2	01	milliVolts
		VOC / VOC2	01	milliVolts
EOL ZENITH	any	ISC / ISC2	01	miliVolts
		VOC / VOC2	01	miliVolts

Keep in mind: *if the sensor channel has been configured as milliVolts, the output values on data logger display will always be shown in milliVolts. Remember to fill in both the slope and the offset for the pyranometer sensor to see real sensor values in* **V and A** *in your datasets during a real-time connection with the data logger (from either Atlas or Atlas Mobile).*

HOW TO CONFIGURE IN EOL MANAGER

Open EOL Manager and go to Settings of the data logger you are working on. Open the Inputs tab and select the following type and model:

ISC
- Group: Analog Inputs
- Sensor Type: Voltmeter
- Sensor Model: **Generic Voltimeter**
- Slope: 4
- Offset: 0

ISC2
- Group: Analog Inputs
- Sensor Type: Voltmeter
- Sensor Model: **Generic Voltimeter**
- Slope: 4
- Offset: 0

VOC
- Group: Analog Inputs
- Sensor Type: Voltmeter
- Sensor Model: **Generic Voltimeter**
- Slope: 12
- Offset: 0

VOC2
- Group: Analog Inputs
- Sensor Type: Voltmeter
- Sensor Model: **Generic V**
- Slope: 12
- Offset: 0

For more information please contact **web@kintech-engineering.com**
or visit our website **www.kintech-engineering.com**

kintech engineering