

TROPOS series converters

DESCRIPTION

Symmetron Tropos series adaptors convert a sensor output signal type to another type:

- A low level AC or reed switch **Frequency** signal (from a floating sensor like an Anemometer) to a **Voltage** output signal.
- A low level AC or reed switch **Frequency** signal (from a floating sensor like an Anemometer) to a 4~20mA **Current** output signal.
- A **Voltage** signal (from a floating sensor like a Wind Vane or Pyranometer) to an amplified **Voltage** output signal.
- A **Voltage** signal (from a floating sensor like a Wind Vane or Pyranometer) to a 4~20mA **Current** output signal.

TECHNICAL SPECIFICATIONS

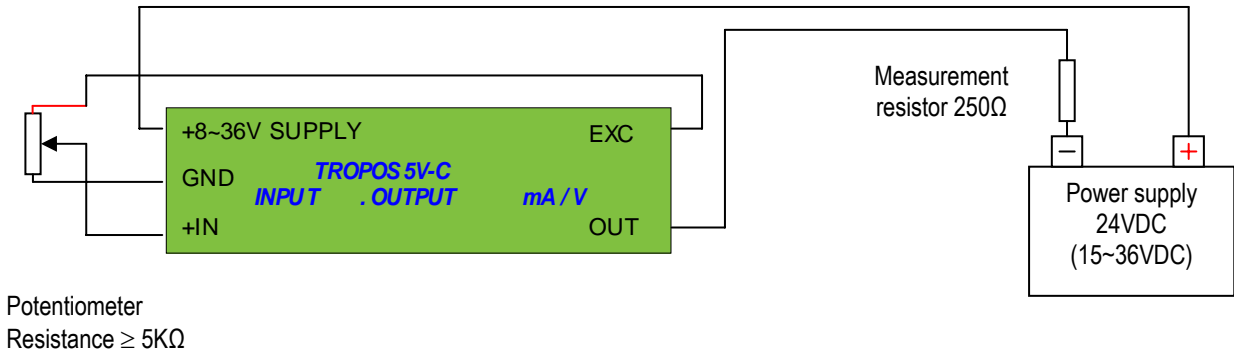
TROPOS-	INPUT RANGE	OUTPUT RANGE	ACCURACY	POWER SUPPLY
SF-10V	0~40Hz (AC >80mV p-p)	0~10V	1%	7~30V @ 8mA
SF-5V	0~40Hz (AC >80mV p-p)	0~5V	1%	7~30V @ 8mA
SF-2.5V	0~40Hz (AC >80mV p-p)	0~2.5V	1%	7~30V @ 8mA
SF-C	0~40Hz (AC >80mV p-p)	4~20mA	1%	8~36V @ 20mA
RF-10V	0~40Hz (reed switch)	0~10V	1%	7~30V @ 8mA
RF-5V	0~40Hz (reed switch)	0~5V	1%	7~30V @ 8mA
RF-2.5V	0~40Hz (reed switch)	0~2.5V	1%	7~30V @ 8mA
RF-C	0~40Hz (reed switch)	4~20mA	1%	8~36V @ 20mA
5V-C	0~5V	4~20mA	0.3%	8~36V @ 20mA
20mV-C	0~20mV	4~20mA	0.3%	8~36V @ 20mA
20mV-5V	0~20mV	0~5V	0.3%	6~30V @ 1mA

- *SENSOR MUST BE FLOATING, i.e. not referred to TROPOS earth.*
- *PROTECTION: Over voltage, inverse connections at power supply pins.*
- *BOX: Rail, (H x W x D) 80 x 23 x 74 mm.*
- *Weight: 80 gr.*
- *CONNECTIONS: screw terminals.*
- *OPERATING TEMPERATURE: -30° ~ +70°*
- *IP RATING: 20*
- *WARRANTY: 2 years.*



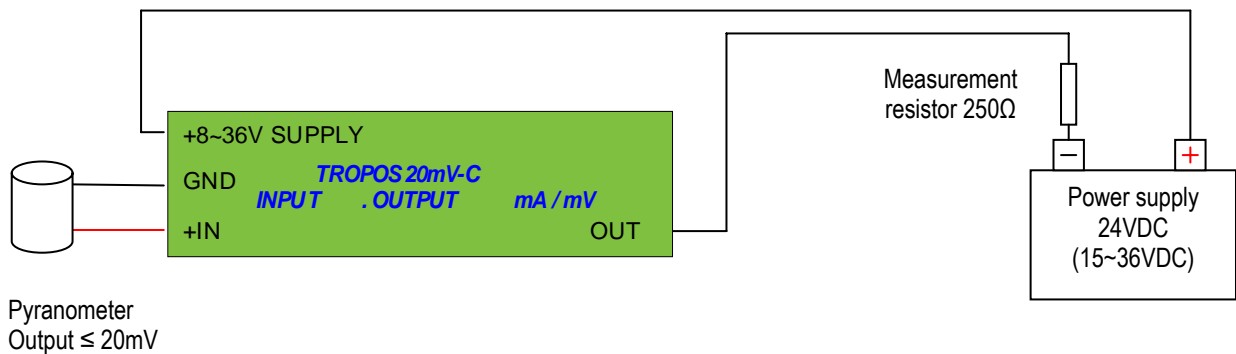
TROPOS 5V-C: Potentiometer or Wind Vane connection. Current Output.

0.5 km long, 2 x 0.25 cable with shield. Shield connection to Power supply (-).



TROPOS 20mV-C: Pyranometer connection. Current Output.

0.5 km long, 2 x 0.25 cable with shield. Shield connection to Power supply (-).

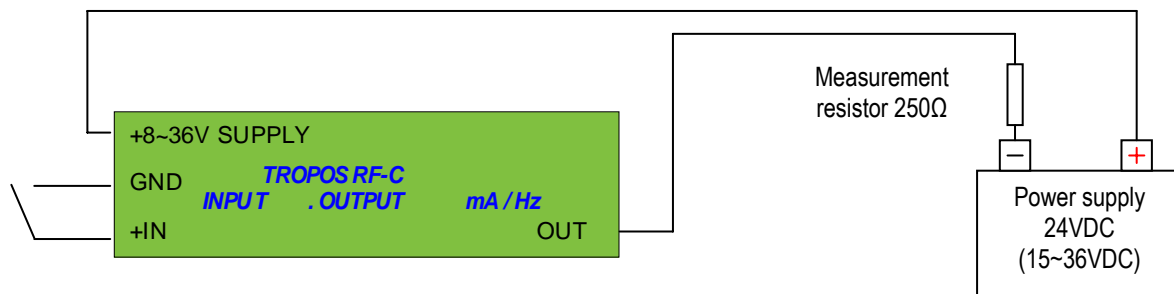


CALCULATION EXAMPLE: MINIMUM POWER SUPPLY VOLTAGE FOR 500 METERS CABLE

- ⇒ Voltage drop in cable: $(82\Omega/km \times 2 \times 0.5km) \times 20mA = 1.64V$
- ⇒ Voltage drop in measurement resistor: $250\Omega \times 20mA = 5V$
- ⇒ Minimum voltage drop required on VOTOC3 terminals: 8V
- ⇒ Minimum power supply voltage: $3,28 + 5 + 8 = 15.64V$

TROPOS RF-C: REED switch connection. Current Output.

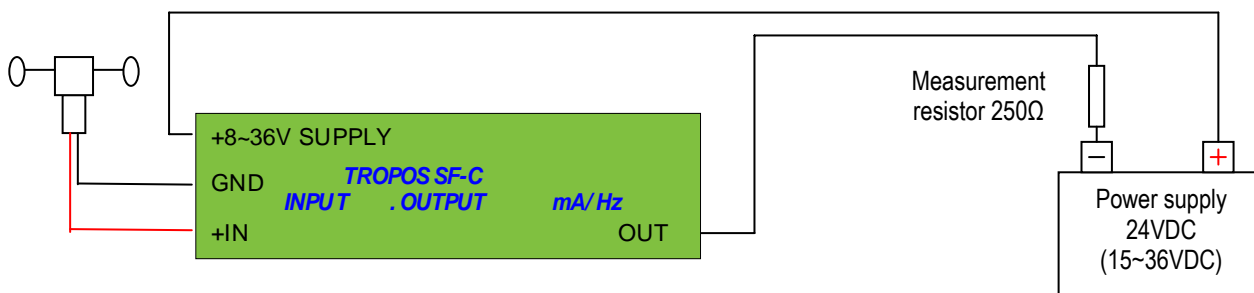
1 km long, 2 x 0.25 cable with shield. Shield connection to Power supply (-).



REED switch
Example: Anemometer

TROPOS SF-C: Low-level AC Anemometer connection. Current Output.

1 km long, 2 x 0.25 cable with shield. Shield connection to Power supply (-).

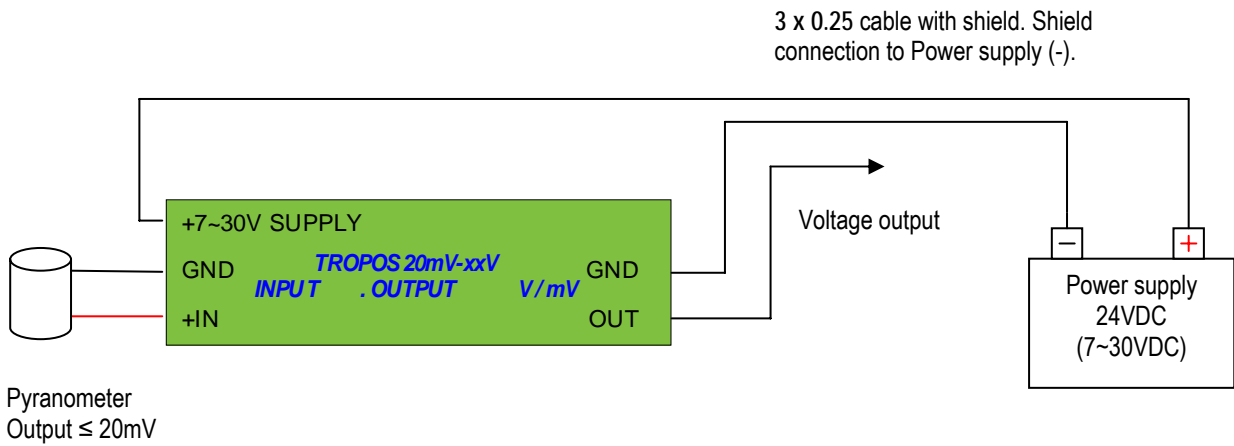


Anemometer
Output mV

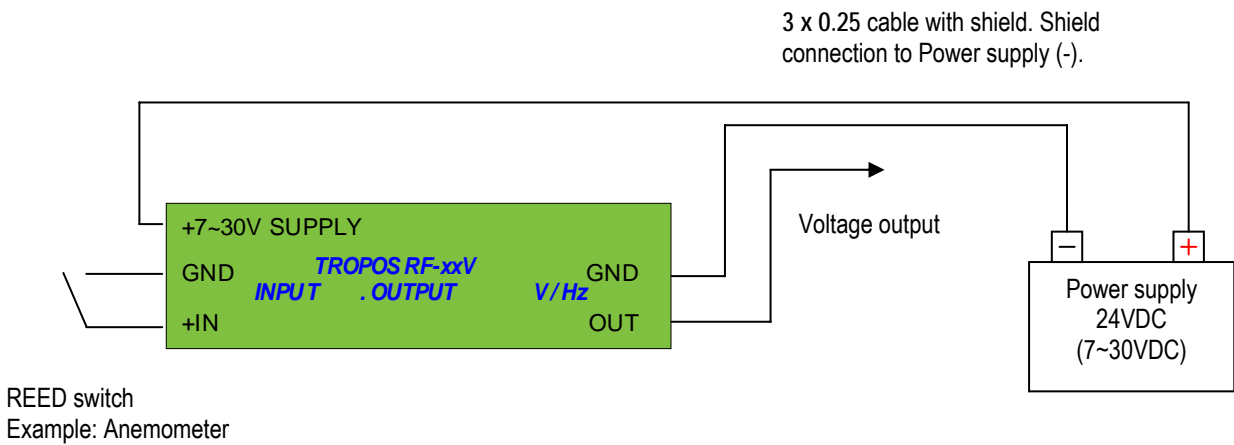
CALCULATION EXAMPLE: MINIMUM POWER SUPPLY VOLTAGE FOR 1000 METERS CABLE

- ⇒ Voltage drop in cable: $(82\Omega/\text{km} \times 2 \times 1\text{km}) \times 20\text{mA} = 3,28\text{V}$
- ⇒ Voltage drop in measurement resistor: $250\Omega \times 20\text{mA} = 5\text{V}$
- ⇒ Minimum voltage drop required on VOTOC3 terminals: 8V
- ⇒ Minimum power supply voltage: $3,28 + 5 + 8 = 16.28\text{V}$

TROPOS 20mV-xxV: Pyranometer connection. Voltage Output.



TROPOS RF-xxV: REED switch connection. Voltage Output.



TROPOS SF-xxV: Low-level AC Anemometer connection. Voltage Output.

