OVARRO
CONNECTING TECHNOLOGIES

TBOX Nano

Version 2.04

TBOX
AN OVARRO TECHNOLOGY

TBOX Nano

- Communication ports
  - USB (for programming)
  - GSM: 4G/LTE
  - RS485
- I/Os
  - 4 x DI
  - 1 x DO
  - 3 x AI

Technical Specifications

General

Processor	Kinetis K66 (ARM Cortex M4) 96 Mhz
Environment	IP68 (4m depth for 4 days)
Working Temperature	-40 °C … + 70 °C

Power Supply

Battery pack (default)	19.2 VDC 12.4 A/h
External Input Voltage	6..30 VDC
Isolation:	
- Between Power supply and 24 V output	> 500 VDC @ 500 Mohm's
- Between Power supply and DO	> 500 VDC @ 500 Mohm's

Consumptions

Sleep mode	Typical: 10 µA Maximum: 20 µA
Low Power (DI scan)	Typical: 30 µA Maximum: 40 µA
Awake (CPU only)	Typical: 10 mA Maximum: 25 mA
Awake (AI active)	Typical: 20 mA Maximum: 40 mA
Awake (GSM communication)	Typical: 50 mA Maximum: 100 mA

Memory

Flash	1 MB + 8 MB
RAM	4 MB

GSM

3G model - Global (Retired)	Type: 3G/2G(GPRS) Model: Telit HE910-GL Frequencies: 2G (EGSM-900): Tx:890 - 914 / Rx:935 - 959 3G (DCS-1800): Tx:1710.2-1784.8 / Rx:1805.2 – 1879.8
4G model - Europe & ME	Type: 4G/2G(GPRS) Model: Telit LE910-EU Bands (Frequencies): 2G: B3 (1800), B8 (900) 3G: NA 4G: B1 (2100), B3 (1800), B7 (2600), B8 (900), B20 (800)
Data rate	115 Kbs
LED	Registration Call active

USB

Type	2.0
Use	Local programming

RS485

Cabling	2 wires (A+, B-)
Protocol	ModBus-RTU (Slave / Master)
Speed	200…115200 bauds

DI / Counter

Type	Voltage free contacts
Contact Wetting Voltage	5 VDC nominal
Contact Wetting Current	1mA @ 5 VDC
Resistance	Contact closed: 1 Kohms Contact open: 100 Kohms
Input frequency	Channel 0: 0-20 kHz when awake Channels 1-3: 0-20Hz
Isolation	No isolation

DO

Type	Solid State Relay
Max. switching voltage	35 VDC
Max. switching current	200 mA DC
ON resistance	Typical: 1 ohm Maximum: 10 ohms
Isolation	>500V peak AC, <0.6mA leakage @ nominal 50Hz for 10 secs >500V DC @>500M Ohm's

AI

Number	3 x multiplexed channels
Type	2 x 0-20mA 1 x 0..5V
Resolution	20 bits
Error at 20°C (voltage) Error at -40° to +70°C (voltage) Error at -40° to +70°C (current)	< 0.05 % < 0.10% < 0.15%
Loop power supply	24 VDC isolated Max: 50 mA
Isolation	No isolation

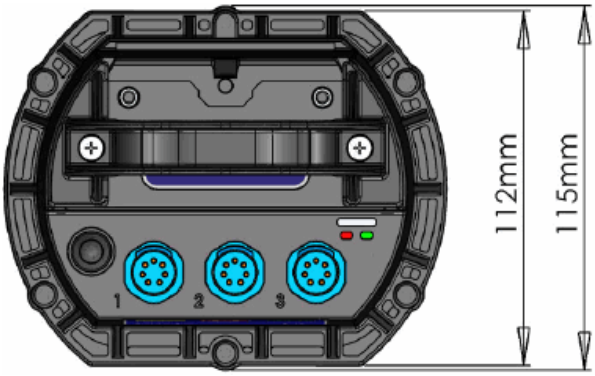
Dimension

	Width: 142 mm Height: 197 mm Depth: 115 mm

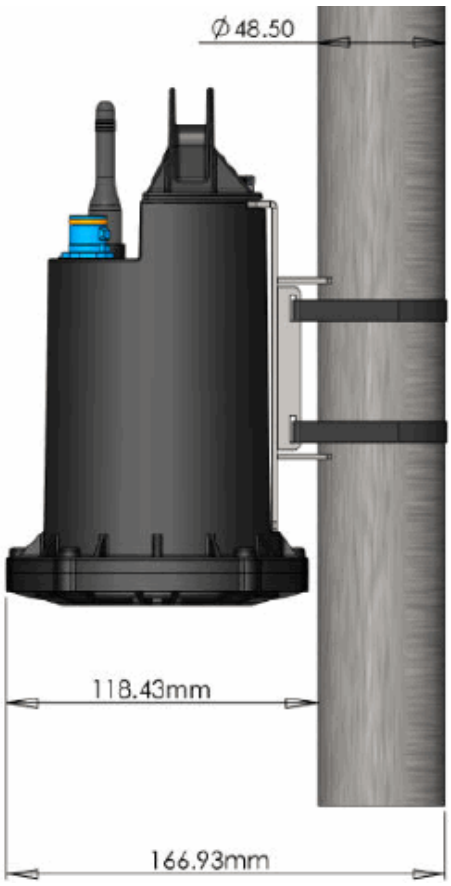
Views

Side View

Top View



Pole Mount



Wall Mount