OMICRON®
IoT solutions

Kontrolog

IoT SYSTEM FOR REAL-TIME MONITORING AND CONTROL

For LoRaWan™, Sigfox, and Wi-Fi Networks

Description

Easily configurable device, designed for remote and real-time control and monitoring of different processes in application fields such as industry, agriculture, water quality, among others. It is offered with WEB IoT monitoring platform support and can be connected to a touch screen HMI for local visualization and configuration.

FEATURES

HMI touch screen for the visualization of:

- Measurements of the 5 input sensors.
- Consumed electric current and AC voltage.
- Battery level.
- Configuration of the alarm limits.
- Configuration of the outputs.
- Graphical record of each variable for up to 48 hours.
- Among others.

5 Analog/Digital Inputs:
Analog: 4-20 mA / 0-10V.
Digital: Dry contact.
Current transformer input for AC current measurement.
1 Input for battery 6/12 VDC, also DC supply voltage is measured.
Power Supply 110/220 VAC input, also AC supply voltage is measured.
1 RS-485 Input for Modbus RTU (Master on network) which can read up to 5 external sensors.
4/5 Relay outputs and/or 1 analog output 4-20mA
Input impedance 4-20mA :: 150 ohm.

ORDERING INFORMATION

P/N: **KL9.3-SL41-USA** **KL9.3-SL41-EU** **KL9.3-W41**	Kontrolog 9.3 Sigfox/WiFi/LoRaWAN, 5 analog or digital inputs / 3 inputs for measurement of power supply variables / One RS485 input / 4 relay outputs / One 4-20mA analog output
P/N: **KL9.2-SL50-USA** **KL9.2-SL50-EU** **KL9.2-W50**	Kontrolog 9.2 Sigfox/WiFi/LoRaWAN, 5 analog or digital inputs / 3 inputs for measurement of power supply variables / One RS485 input / 5 relay outputs
KL-LCD4.3	HMI Touch screen. Full HD, 4.3".
KL-CT30A **KL-CT50A** **KL-CT100A**	Current transformer 30 A / 50 A / 100 A
KL-CH6V	Battery charger: 6V, 0.2 A
KL-CAB6V	IP67 plastic cabinet. With 6V / 4.5Ah battery.
KL-IN-ADAP	Adapter modules for analog inputs 0-10V / 4-20 mA

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INPUT CHARACTERISTICS

Parameter	Description
Analog / Digital Inputs	5 configurable A/D inputs for: • 10k NTC Thermistors. • Ambient Temperature and Humidity Sensors. • Analog inputs 4-20 mA / 0-10 VDC (See wiring diagram) • Dry contact digital inputs. • Digital pulse counter. • Frequency meter (Input 5 only, up to 20kHz)
AC current sensor	Current transformer input for AC current measurement.
RS-485 connector	For Modbus RTU (Master on the network)
Input impedance	150 ohms :: 4-20 mA

OUTPUT CHARACTERISTICS

Parameter	Value	Unit
Max. switching current for relays 1 and 2	12	A
Max. switching current for other relays	3	A
Max. switching voltage for the relays	240	VAC, 50/60 Hz
Analog current output (Only for model KL9.3)	4-20	mA
Built-in internal alarm	An internal audible alarm is automatically activated when any detected variable; current or voltage, exceeds the user-set limits; an AC interruption is detected; or a digital input remains active for a considerable time.	

POWER REQUIREMENTS

Parameter	Value	Unit
Maximum operating current	0.2	A
Maximum input AC voltage	250	VAC, 50/60 Hz
Maximum input DC voltage	15	VDC
Nominal AC voltage	110 - 220	VAC, 50/60 Hz
Nominal DC voltage	6 - 12 ±0.1	VDC

CONTROL CHARACTERISTICS

Parameter	Description
Programmable control methods	• ON/OFF • PID. • Timers. • Remote activation. • Pulse counter. • Digital input tracing.
Configuration method	Configuration using the HMI screen options, or remote configuration functions through the WEB IoT platform.

WIRELESS COMMUNICATION SPECIFICATIONS

Device Type	Standard	Note
Wi-Fi®	Wi-Fi® (IEEE 802.11) 2.4 GHz. WPA2 encryption.	Stores the configuration data for up to 3 networks.
Sigfox/ LoRaWAN USA	Sigfox, RC2 902 - 905Mhz / RC4 920 - 923Mhz, 22dBm ERP LoRaWAN, US902-928, AU915-928	Zone 2 (USA, Mexico, Brazil) and Zone 4 (Latin America, Australia).
Sigfox/ LoRaWAN EU	Sigfox, RC1 868MHz LoRaWAN, EU863-870	Zone 1 (Europe).

RECOMMENDED OPERATING CONDITIONS

Operating Conditions	Value	Units
Storage Temperature	20 (68) – 45 (113)	°C (°F)
Storage Ambient Humidity	60 ± 25	% R.H./Non condensable
Operating Temperature	0 (32) - 45 (113)	°C (°F)
Ambient Operating Humidity	60 ± 25	% R.H./Non condensable

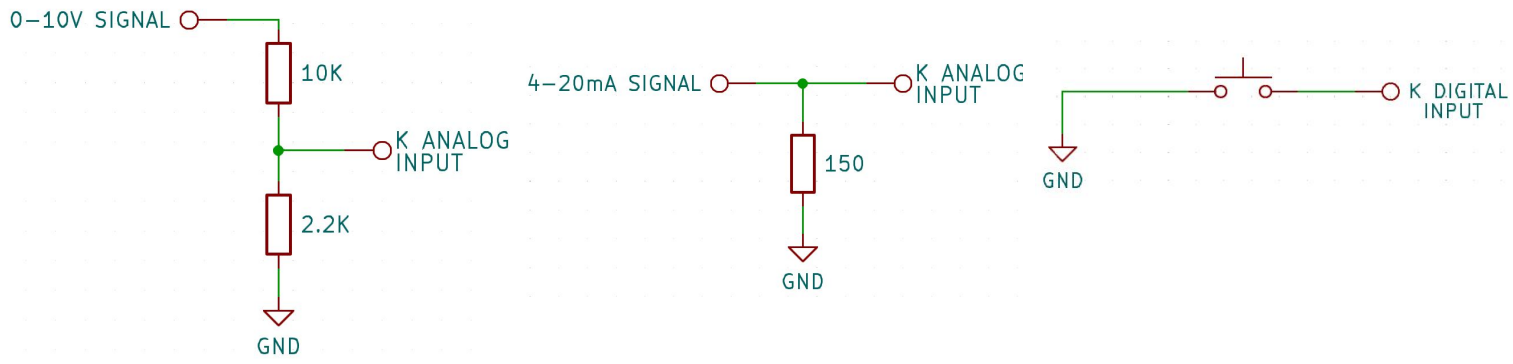
Standars	Protection Type
IEC 60529/ EN 60529 Standard	**IP40** Indoor use only
UL94-V0	UL94-V0 plastic for high flammability rating (most flame retardant).

POSSIBLE APPLICATIONS

Application	Related sensors
Measurement of industrial Signals: **Industrial Applications**	• Temperature and humidity. • Pressure and flow. • Analog Signals: 4-20 mA / 0-10 V for different types of sensors and transmitters. • Digital Modbus RTU signals. • CO, CO2, O2, transmitters. • Digital (dry contact signals).
Security surveillance in systems such as: power generation plants, telecommunication stations, ATMs, water treatment plants.	• Temperature and humidity. • Remote activation. • Door opening. • Detection of equipment activity. • Hourmeters. • Fuel tank levels. • Battery status levels.
Measurement of variables in **precision agriculture**	• Remote activation of pumps and irrigation systems. • Measurement of soil or water variables. • Equipment status monitoring.

WIRING DIAGRAMS

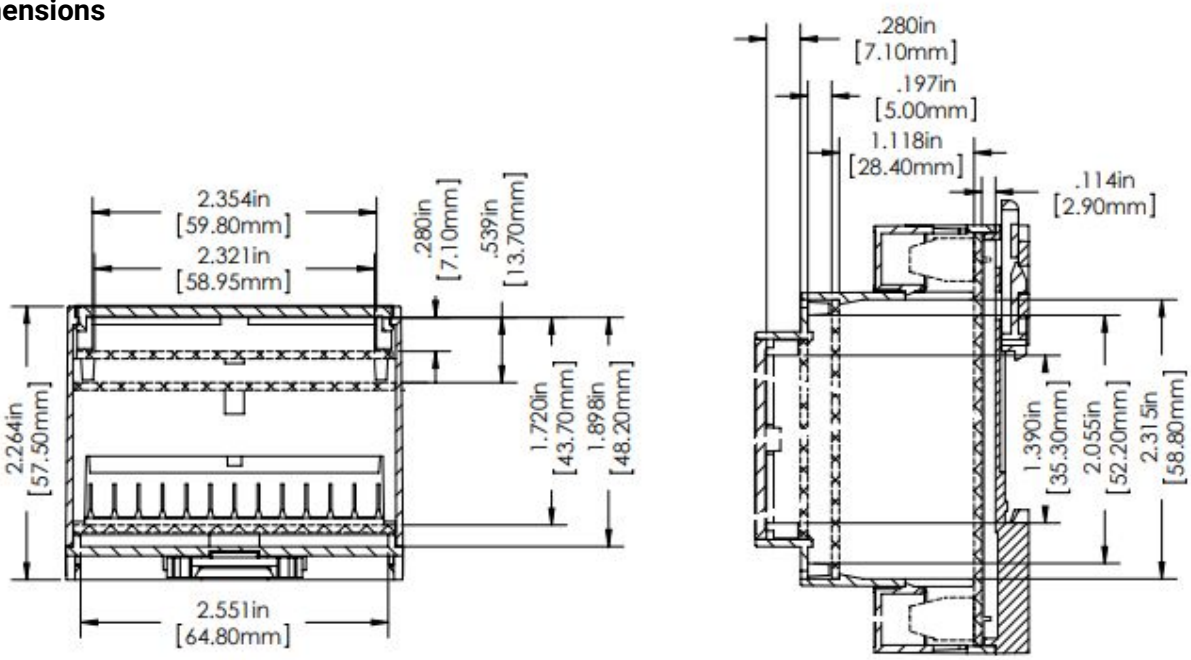
The following diagrams indicate the adaptations to be made to the sensor input signal.
Note: The Kontrolog has additional modules to adapt the sensor inputs to the inputs received by the device. They can be ordered with the device at the moment of purchase.



Resistance values in ohms.

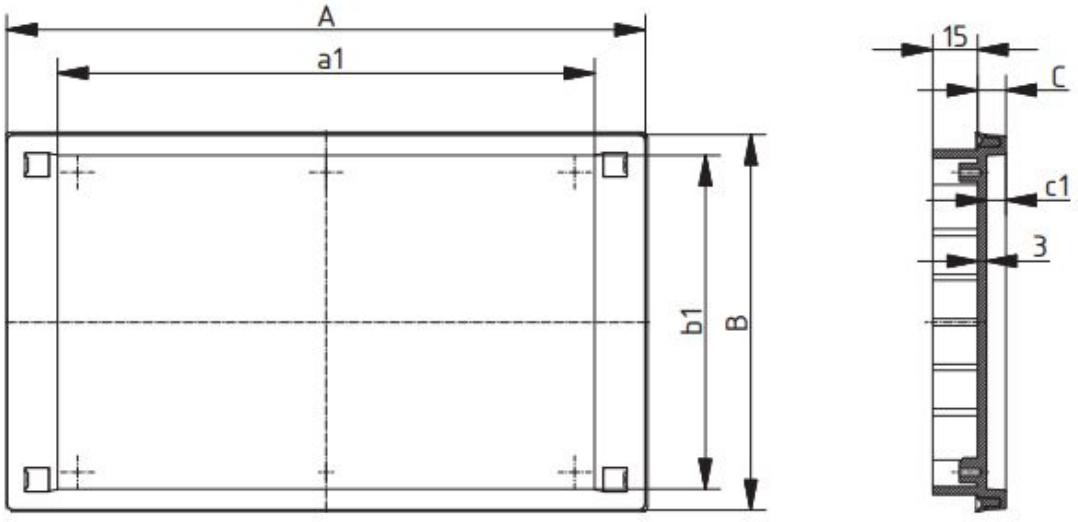
DIMENSIONS

Main Unit Dimensions



Material: PC/ABS (UL94V-0).
Total weight: 210g, without accessories and sensors attached.

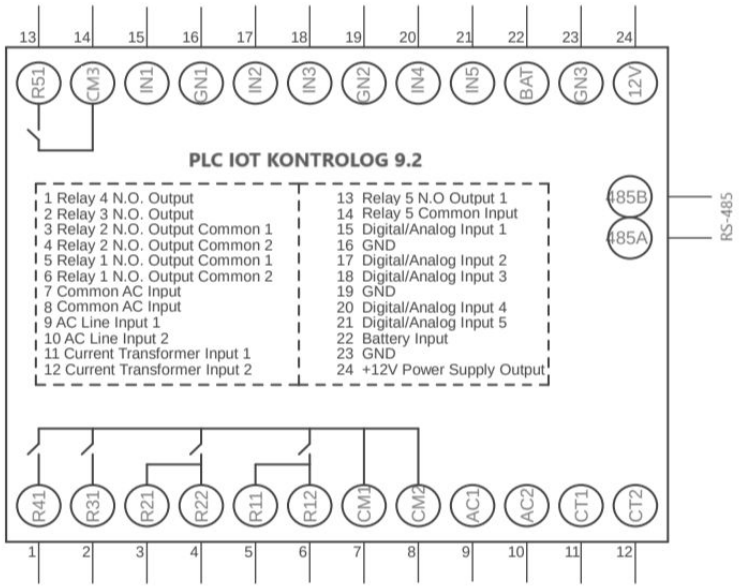
Panel dimensions for the touchscreen



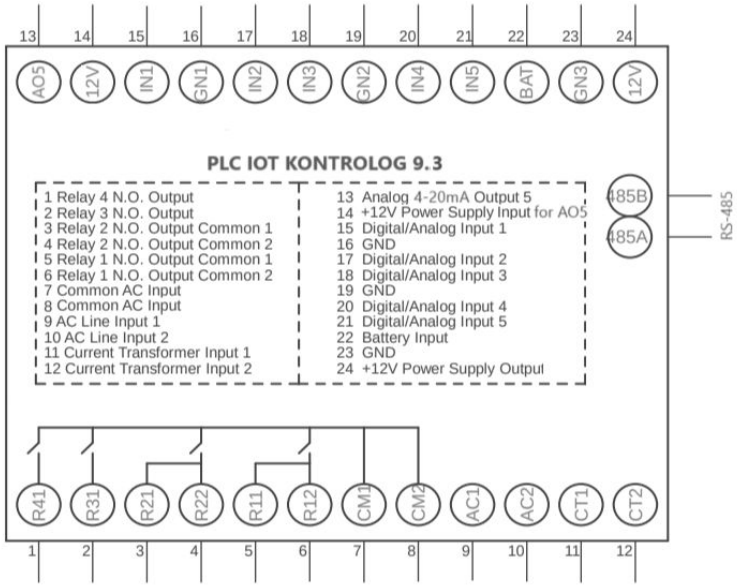
Material: ABS (IP54). A=166mm B=106mm C=9.5mm a1=131.3mm b1=92.3mm c1=6.5mm.
Total weight: 165g.

CONNETIONS SCHEMATIC

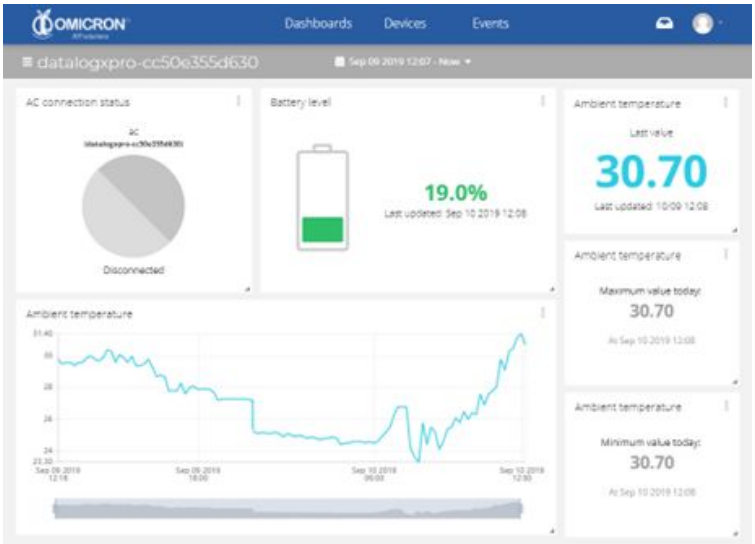
Kontrolog 9.2



Kontrolog 9.3



WEB PLATFORM AND SERVICES



Kontrolog devices are offered with the IoT Centriomega® WEB monitoring platform.

Users can access the Omicron platform via PC, Smartphone, or Tablet, to perform:

- ➔ Remote monitoring and visualization of current measurements, state of the outputs and sensor's variable records, in graphs and data tables, for up to 2 years.
- ➔ Remote configuration of the device parameters.
- ➔ Alarm management for variables out of range, battery levels, and AC power failure.
- ➔ Add comments to records.
- ➔ Set alarm limits, alarm events, and notifications via email, SMS, voicemail, Telegram messaging service, or webhooks.

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