

SCADA Light / Meter Reading System

Interface & Communication Unit (ICU) Technical Specifications



The ICU - Interface Communication Unit is a low-cost , powerful, wired/wireless data acquisition and control unit that is part of a SCADA Light / Meter Reading System. It is equipped with an onboard Cellular/Ethernet module and enhanced software capabilities to enable monitoring and control of field devices. Typical applications include remote meter reading and small SCADA systems for water, security, street lighting, traffic lights, etc.

The ICU communicates with Larotec's ISG – Internet Server Gateway via cellular communication (2G/3G), Ethernet, satellite, and Internet infrastructures. Larotec's ICU is ideal for M2M applications where a smart device is connected to the network, combining low-cost cellular/Ethernet communication with the flexibility to interface with variety of devices in the field. It can also serve as a transparent modem between smart devices with RS232/485 connectivity to a host data collection server/ control center. The ICU uses a wide range of digital and analog inputs and a command output.

Collected data can be transmitted to Larotec's central management software - ISG using TCP/IP connectivity over any available communication networks. The ICU supports a bi-directional connection that allows remote control of devices for actions such as sirens, pumps, door controls, power breakers reset, and supply shut-offs for electricity or water, etc. All data and events from the connected devices are time tagged by the ICU's real-time clock.

The ICU stores the data in its non-volatile memory and performs data logger functions. The data is analyzed, compressed and sent to the ISG at requested time intervals or preset polling from the ISG for further analysis, monitoring and control. Some local processes can be performed by the ICU.

ICU Technical Specifications:

Two types of ICUs are available;

Remote meter / sensor monitoring, model ICU-MR.

Mini-SCADA Remote Terminal Unit (RTU), model ICU-MS.

Each of the two models is available with a built-in cellular modem or with an Ethernet port. In the near future, both connections will be available within the same unit.

ITEM	Description	ICU-MR	ICU-MS
Power Supply	7-24 VDC or with external wall mount power supply 90- 240 <u>Optional:</u> Variety of Lithium batteries for sites without power source	✓	✓
Power Consumption	10mA in idle mode,500mA at modem transmission , 1.8Amp @3.6V at peak	✓	✓
Interfaces to field devices	RS-232 up to 2 channels <u>Optional:</u> RS-485 1 channel	one RS232	✓
Inputs	digital inputs (DI), also serve as meter pulse inputs	2	4
	Additional digital inputs (DI) or analog inputs, (AI) 4-20mA (software programmable)	-	3
Outputs	<u>Optional:</u> Solid state relay output (DO), up to 50mA 30V	-	✓
Weight	105 g (basic option)	✓	✓
Dimensions	149x57x36 mm	✓	✓
Temperature Range	-20° and + 70° (-35 - +80 optional)	✓	✓
WAN Communication Options	GPRS, 2.5G/3G	✓	✓
	Ethernet	✓	✓
	Wi-Fi (future option)	-	-
	External satellite connection, (replace GPRS) via Ethernet port	✓	✓
Cellular Band	Dual/quad band	✓	✓
Antenna	GSM external antenna	✓	✓
Battery and power options	- 2.4V Ni, Me AA Size (Read and Save) -12V Lead Acid 12V 4Ah - Internal charger for 2.4V battery - External charger for 12V battery	✓	✓
Memory capacity Configuration	Built-in 1 MB plush memory for data storage. Stores all operational parameter values (reporting schedule frequency, data acquisition rate, etc.). Data logger.	✓	✓
Casing	IP52, protection <u>Optional:</u> Water protection, IP65 Explosion-proof case	✓	✓
Real Time Clock back-up	Onboard lithium battery	✓	✓
Operational Indicator	LED Indicators: a. DC power input b. GSM signal quality c. Network connection, input status	✓	✓
ICU remote configuration	End-device sample rate change	✓	✓
	Firmware change/upgrade	✓	✓
	End-device driver selection	✓	✓
	Transmit to ISG rate change	✓	✓
Additional Features (options)	Exception and alarm reading and transmission	✓	✓
	Close to real-time reading	✓	✓
	GPRS connection management (always connected)	✓	✓
	TCP/IP-HTTP protocol	✓	✓
	ICU PC/Local configuration/technician mode	✓	✓
	Transparent mode (TCP/IP)	✓	✓
	Encryption and Authentication	-	-
	Fix IP Real-time reading	✓	✓
	Use of SMS instead of GPRS when data network connection is not available	✓	✓
Programming parameters can be monitored and/or changed from the ISG	✓	✓	