

M2M Control C450

Advanced M2M and IoT Platform

The perfect balance of quality, performance, flexibility and affordability

For Professional M2M and IoT Applications

The M2M Control C450 has been designed for the most demanding M2M and industrial Internet of Things applications, which cannot be solved with simpler non-programmable devices. The Device is especially suitable for rough environments (IP65).

The C450 combines a free programmable PLC controller, a data logger with an integrated GSM/GPRS modem. This makes the C450 to a very powerful solution for professional industrial wireless applications.

The **M2M Control RTCU Platform** brings all the necessary tools together to develop, implement and maintain today's sophisticated M2M and industrial IoT applications.

The development task is supported by the **M2M Control IDE development environment** (IEC 61131-3) complemented by a large and comprehensive documentation and application example library.

The C450 is fully supported by the **M2M Control GPRS Gateway**. The cornerstone of the communication infrastructure ensuring reliable two-way device communication in any network environment. Deploying and maintaining new application and firmware versions for devices in the field are handled by the powerful **M2M Control Upgrade & Deployment Server** (FOTA).

10 years of experience and know-how in one product!

Experience and Know-how

For 10 years Infranet Technologies has been committed to offer the most sophisticated platform for advanced and highly demanding M2M / IoT applications. We supply our products under the brand "M2M Control".

The M2M Control C450 is the result of this accumulated experience combined with valuable feedback from hundreds of professional and mission critical applications by major organizations around the world.

M2M Control products are deployed all over the world - In any imaginable application and environment.



Device Advantages

- Quad-band GSM engine.
- Internal and external antenna.
- Digital and analog inputs
- AC/DC relay outputs (5A)
- Multiple RS232 / RS485 interfaces
- MODBUS expandable I/O
- 1-Wire Bus
- ISM medium range RF (868 Mhz)
- Digitized voice playback.
- DTMF decoding/transmission.
- Large memory capacity.
- Micro SD-Card (up to 32 GB)
- FAT32 file-system.
- AC / DC powered
- High-capacity backup battery.
- State of the art power-management.

Platform Advantages

- X32 execution architecture.
- RTCU IDE development tool.
- Programmable in IEC61131-3 (ST)
- Huge standard API.
- Comprehensive protocol support: TCP/IP, UDP, FTP, SMTP, MQTT and more.
- Full featured Device Simulator.
- Sophisticated deployment tools.
- Fast and free email support.

M2M Control C450 Specifications

Processor and Main-memory

- Powerful 32-bit ST ARM processor.
- 1088 KB fast execution RAM.
- 2304 KB Flash for firmware/application.

Storage

- 3.5 MB persistent data flash.
- 4 MB internal FAT32 flash drive.
- 1 MB circular automatic datalogger.
- 8 KB FRAM with fast access / unlimited write endurance.
- Micro SD-CARD reader. Up to 32 GB.

GSM

- Quad-band GSM engine
850/900/1800/1900 Mhz
- GPRS Class B Multislot 10
- CSD with up to 19 Kbps.
- SMS / PDU.
- DTMF decoding / transmission.
- Digitized voice playback / IVR.
- Micro-SIM 1.8/3 volt.
- Internal SIM card-reader.
- External or internal antenna. Selectable by DIP switch or application
- Optional Gemalto SIM Chip.

User Interface

- 4 x bi-colour LED.
- DIP-switches.
- Reset / recovery switch.
- Antenna selection DIP
- Mini USB-B as service port

Electrical Specification.

- Supply voltage range:
8 to 36 VDC or
85 to 265 VAC
- Short and reverse power protected.

Battery and Charger

- On-board 2Ah (nominal) Li-Ion battery.
- Intelligent charger with temperature throttle and sub-zero degrees support.
- On-board temperature sensor.

Digital/Analog Interface

- 4x relay output.
Max. 5A @250VAC / 30VDC
- 5 x digital inputs.
Logic high: 6 to 40 VDC.
Logic low: -5 to 3 VDC.
- 4 configurable as IEC62053-31 Class A input
- Digital input #5 can be used as ignition.
- 4x analog inputs.
Range is 0..10V or 0..20mA
Resolution: 10/ 12 bit
Precision: $\pm 1.5\%$ FSR @ 25°C
- 4x analog outputs.
Range is 0..10V or 0..20mA
Resolution: 10 bit
Precision: $\pm 1.5\%$ FSR @ 25°C
- Protected against transients and low-pass filtered.
- Expandable I/O with MODBUS.

Communication

- 1 x RS232 with control signals.
- 1 x shared RS232 / RS485
- 1 x RS485 with MODBUS support.
- 1-Wire bus.
- On-board 868 Mhz ISM RF
- ISM RF can be disabled for worldwide compliance requirements

Power Management

- 5 execution speeds.
- Wait for Event: Timer, Digital input, RS232, GSM and power change state.
- Wait for event, from: 600 uA@12V.
- Supervision of supply voltage.

Internal Interfaces.

- Screw-terminals for:
Power, I/O and 12/24V DCOUT
- Angeled screw-terminals for:
RS232, RS485, 1-Wire and 3.3V DCOUT.
- Mini USB-B as service port

External Interfaces.

- SMA Female connector for external GSM antenna
- 3 x PG11 cable glands
- 2 x PG9 blind plugs

Physical Characteristics

- Encapsulation: Durable Polycarbonate housing.
- Approx. 680 gram without accessories.
- W 130x H 180 x D 60 mm.
(without SMA antenna and PG connectors).

Environmental Specification

- Operating temperature: -30 to 60°C.
- Battery charge temperature:
-10 to 45 °C
- Recommended storage temperature:
0 to 45°C.
- Humidity: 5..90% (non condensing).
- Ingress Protection: IP65

Approvals

- CE EU EMC directive 2004/108/EU
- Applied R&TTE directive.
- GSM engine: CE/GCF/FCC/PTCRB.

Warranty

- Two-years return to factory parts and labor.
- Optional warranty up to 5 years.
(restrictions apply).

Note: Some features are currently under development.

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