

Datasheet TeleController TC012



► Introduction

The TC012 is a TeleController in a series of Remote Terminal Units (RTU) that Inter Act has developed for telemetry over internet. The TC012 can be used as stand-alone controller or can be connected to a private and secured (remote) SCADA domain in TeleControlNet.

TeleControlNet.nl is a Software as a Service (SaaS) for WEBscada and WEBmes applications.

The TC012 is a combination of a Programmable Logic Controller (PLC) and a generic computing platform with onboard 2G/3G-modem for (wireless) data communication.

The TC012 is a solution for process control and remote access via internet or TeleControlNet.



► Main functions

PLC module

The TC012 contains a full-function PLC, with onboard I/Os. The TC012 is specifically designed to control small processes and machines and to perform simple-to-medium automation tasks. Compact and economical, the TC012 enables you to use a low-budget unit without compromising on features and technology. The TC012 offers the flexibility of Ladder programming (48K Ladder code, virtual) and onboard I/O configurations.

Modem module

The embedded module consists of a smart 3G modem and various communication options. The modem enables secure wireless five-band HSPA+ and four-band 2G connectivity. The TC012 contains configuration software enabling connection to TeleControlNet. The connection with TeleControlNet can be realized via a wireless mobile 2G/3G APN network. TeleControlNet is an internet SCADA/MES SaaS for remote process data collection, data registration and data presentation. As well as a remote web-based HMI user interface to control the process from wherever there is internet access.

Tasks

The TC012 performs three major tasks:

1. It allows remote users to control the local process.
2. It controls and monitors local processes and machines.
3. It sends process alarms in real time to TeleControlNet and from there it can send an alarm message as e-mail or sms.

▶ Main features

- Dedicated Programmable Logic Controller with digital and analog I/O.
- 3G modem.
- Mountable on a 35 mm DIN rail.
- Capable of standalone operation.
- Cost-efficient solution for e.g. one- or two-pump installations.
- Standard PLC software available.

▶ Specifications

Supported frequency bands

- GSM/GPRS/EDGE: 850/900/1800/1900 MHz
- UMTS/HSDPA/HSUPA: 800-850/900/1900/2100 MHz (B1, B2, B5, B6, B8)

Max connectivity speeds

- GPRS: 85.6 Kbps DL/85.6 Kbps UL (class 12)
- EDGE: 237 Kbps DL/237 Kbps UL (class 12)
- HSDPA: 7.2 Mbps (Cat 8) downlink speed
- HSUPA: 5.76 Mbps (Cat 6) uplink speed

Approvals

- R&TTE, GCF, CE, FCC, PTCRB, IC, UL
- WEEE, EUP, RoHS, and Reach compliant

Interfaces

- 1 x 2G/3G antenna
- 1 x USB 2.0
- 1 x mini USB for PLC-programming
- 1 x Mini SIM card

Dimensions

- Height: 104 mm (4.1")
- Width: 51 mm (4.8")
- Depth: 122 mm (2")

Weight

- 328 g

Supply voltage

- 20.4 VDC to 28.8 VDC (max. 10% ripple)

Supply current

- Max. 0.5 A, external fuse

Environmental

- Operating temperature: 0 °C to 50 °C (32 °F to 122 °F)
- Storage temperature: -20 °C to 60 °C (-4 °F to 140 °F)
- Relative humidity (RH): 10% to 95% (non-condensing)
- Mounting method:
 - DIN rail mounted (IP20/NEMA1)

Digital inputs

- Number of inputs: 18 (two groups)
- Input type: pnp (source) or npn (sink)
- Galvanic isolation: None
- Input voltage:
 - pnp (source): 0-5 VDC for Logic '0'; 17-28.8 VDC for Logic '1'
 - npn (sink): 17-28.8 VDC for Logic '0'; 0-5 VDC for Logic '1'
 - I0-I15: Input current 3.7 mA @ 24 VDC - Response time 10 ms typical
 - I16-I17: Input current 1.2 mA @ 24 VDC - Response time - 20 ms typical
- Input cable length: Up to 100 meters, unshielded
- High speed inputs (specifications below apply when wired as H.S.C)
 - Frequency - 10 kHz maximum
 - Minimum pulse width - 40 μs

Digital outputs

- Number of outputs: 11 relay (in two groups)
- Output type: SPST-NO (Form A)
- Isolation: By relay
- Type of relay: Tyco PCN-124D3MHZ or compatible
- Output current: 3 A maximum per output (resistive load); 8 A maximum total for common
- Rated voltage: 250 VAC/30 VDC
- Minimum load: 1 mA @ 5 VDC
- Life expectancy: 100k operations at maximum load
- Response time: 10 ms (typical)
- Contact protection: External precautions required

Analog inputs

- Number of inputs: 4
 - AN0 and AN1: Input range 0-20 mA, 4-20 mA; Input impedance 154 Ω ; Maximum input rating 30 mA
 - AN2 and AN3: Input range 0-10 VDC; Input impedance 20 K Ω ; Maximum input rating 28.8 V
- Galvanic isolation: None
- Conversion method: Successive approximation
- Resolution: 10-bit default and 12-bit programmable
- Conversion time: All analog inputs are updated every 8 PL scans, regardless of how many inputs are actually configured
- Precision: $\pm 2\%$
- Status indication: Yes, if an analog input deviates above the permissible range, its value will clip on its maximum
- Input cable length: Up to 30 meter, shielded twisted pair

Program

- Ladder code memory: 48K (virtual)
- Execution time: 1.5 ms for bit operations (typical)
- Memory bits (coils): 256
- Memory integers (registers), 16 bit: 256
- Timers: 64

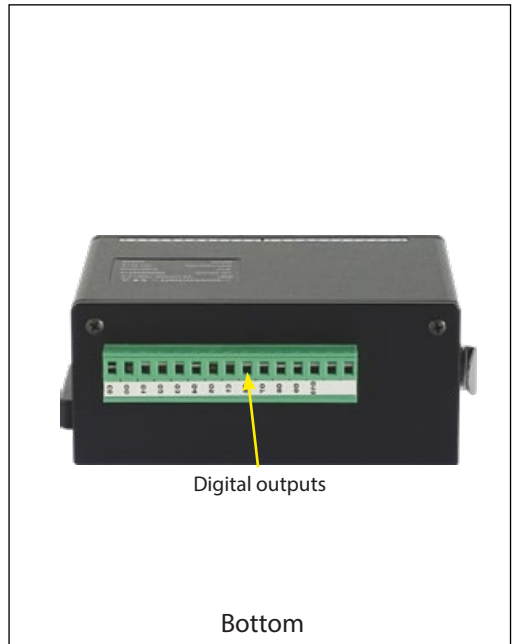
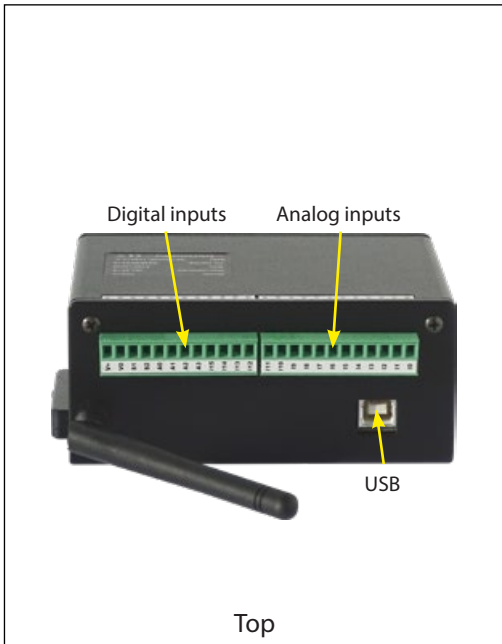
Miscellaneous

- Multicolour operating status LED, indicating the status of the modem

Views



Connections



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