TeleControlNet

Inter Act
industrial automation

Datasheet TeleController JAZZminV2

Introduction

The JAZZmin is a TeleController in a series of Remote Terminal Units (RTU) that Inter Act has developed for telemetry over internet. It 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 JAZZmin is a combination of a Programmable Logic Controller (PLC) and a generic computing platform with onboard 2G/3G/4G(LTE)-modem for (wireless) data communication.

The JAZZmin is an all-in-one solution for local process control, data acquisition and remote access via internet or TeleControlNet. It benefits from the combination of a PLC function and flexible computing power with data storage capability.

Main functions

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

The JAZZmin local HMI application enables you to design up to 60 text screens, using up to 64 HMI variables for the display of time, date and real-time system data.

Computing module
The embedded computing module consists of an ARM9 generic computing platform with various communication options. It performs tasks such as data storage, mini webserver interface and (wireless) communications.

The JAZZmin contains configuration software enabling connection to TeleControlNet. The connection with TeleControlNet can be realized via a wireless mobile 2G/3G/4G APN network or any wired network connection.

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 JAZZmin performs five major tasks:

1. It stores process data locally.
2. It allows remote users to control the local process.
3. It controls and monitors local processes and machines.
4. It synchronizes the central TeleControlNet database with the local data.
5. 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.
- Intelligent 2G/3G/4G/ethernet router.
- Large local data buffer (> 10 million data records, incl. date- and timestamp).
- Flexible and powerful computing power.
- Mountable on a 35 mm DIN rail or in a front panel.
- Applicable in PLC-controlled systems, such as an HMI (WEBscada) terminal.
- Capable of standalone operation.
- Cost-efficient all-in-one solution for e.g. one- or two-pump installations.

Specifications

Supported frequency bands

- Dual Band 2G (GSM) 900/1800 MHz
- Tri Band 3G (UMTS, W-CDMA) 900/1800/2100 MHz, FDD-Band (8,3,1)
- Quad Band 4G (LTE) 800/900/1800/2600 MHz, FDD-Band (20,8,3,7)

Max connectivity speeds

- **LTE Cat. 3**
  DL: max. 100 Mbps, UL: max. 50 Mbps, 2x2 DL MIMO
- **HSPA+ DL Cat.24 / UL Cat. 6, Dual Carrier**
  DL: max. 42 Mbps, UL: max. 5.76 Mbps
- **EDGE Class 12 data rates**
  DL: max. 237 kbps, UL: max. 237 kbps
- **GPRS Class 12 data rates**
  DL: max. 85.6 kbps, UL: max. 85.6 kbps

Standalone GPS

- Wideband GPS receiver

Interfaces

- 1 x 2G/3G/4G antenna
- 1 x GPS antenna
- 1 x 10/100 Mbps Ethernet
- 2 x USB 2.0
- 1 x microUSB/USB 2.0 (shared)
- 1 x SIM card

Dimensions (h × w × d)

- Height 114 mm (4.5")
- Width 148 mm (5.8")
- Depth 72 mm (2.8")

Weight

- 468 g

Supply voltage

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

Supply current

- Typically 290 mA @ 24 VDC, ~7 W, external 0.5 A fuse required

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:
  - Panel mounted (IP65/NEMA4X)
  - DIN rail mounted (IP20/NEMA1)

Display

- Type: STN LCD
- Illumination backlight: LED, yellow-green, software controlled (LCD backlight enables the display to be viewed in the dark)
- Display size: 2 lines, 16 characters long
- Character size: 5 x 8 matrix, 2.95 x 5.55 mm

Keyboard

- Number of keys: 16 keys
- Key type: Metal dome, sealed membrane switch

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 KΩ; Maximum input rating 28.8 V
- Galvanic isolation: None
- Conversion method: Successive approximation
- Resolution: 10-bit (0 to 1023)
- Conversion time: All analog inputs are updated every 8 PL scans, regardless of how many inputs are actually configured.
- Precision: ± 2%
- Status indication: Yes, if an analog input deviates above the permissible range, its value will be 1024
- Input cable length: Up to 30 meters, shielded twisted pair

Program

- Ladder code memory: 48K (virtual)
- Execution time: 1.5 µs for bit operations (typical)
- Memory bits (coils): 256
- Memory integers (registers), 16 bit: 256
- Timers: 64
- HMI displays: 60 user-designed displays available -
- HMI variables: 64 HMI variables are available to conditionally display text and data. List variables add up to 1.5K's worth of HMI capacity

Miscellaneous

- Clock (RTC): Real-time clock functions (date and time)
- Battery back-up: 7 years typical at 25 °C, battery back-up for RTC and system data, including variable data

Panel mounting

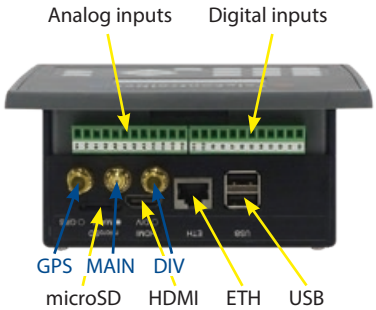
- Cut-out dimensions (w x h): 120 mm x 96 mm
- Maximum faceplate thickness: 4 mm

Views

In perspective

Back

Connections



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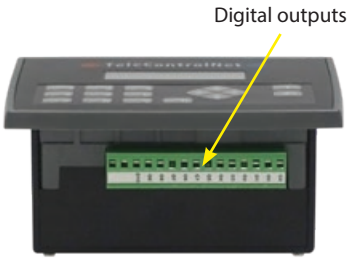

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Notes

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