GTCFibre

DATA SHEET

Centralised Technical Management Module using optical fibre

FEATURES & BENEFITS

- **Two power supplies and energy controls: 48VDC and 230VAC**
- **Integrated backup battery**
- **Optical access SFP 100/1000 IP, 2 ports 10/100/1000TX, 2 ports 10/100 POE+**
- **Temperature and humidity meter (probes included)**
- **Dediacted i/o : contact closures, serial, analog**
- **Local and remote measurement records**

DESCRIPTION

The IFOTEC GTCFibre centralised technical management module is used to connect applications to an Ethernet network for remote control and monitoring. This model is designed for centralised management of telecommunications cabinets and equipment rooms.

With 6 Ethernet switch ports for the connection to a network or another equipment:

✓ 2 SFP optical port (100-1000Base-FX & BX) - One equipped with one 1000BASE-BX-U SFP
✓ 2 10/100/1000Base-TX ports
✓ 2 10/100Base-TX POE+ ports

The equipment can use the mains 230VAC and 48VDC power supplies and has built-in energy monitoring functions :

✓ Integrated mains power supply measurement: voltage, current, active and reactive power, harmonics.
✓ 48VDC battery voltage meter
✓ Connection capability to smart meters (depending on type)

Multiple command-control inputs and outputs:

✓ 10 opto-isolated contact-closure inputs
✓ 1 analog input 0-60V isolated
✓ 1 analog input 0-10V/4-20mA
✓ 1 input for analog temperature probe (included)
✓ 1 input pour temperature & humidity sensor (included)
✓ 5 contact-closure outputs opto-isolated 60V
✓ 1 contact-closure PWM output
✓ 2 0-10V analog outputs isolated
✓ 2 RS232/RS422/RS485 serial ports
✓ 1 interface port for radio communication module
✓ 1 USB console port

Remote power supply controls:

✓ Command control on 3 x 230VAC supply applications

High availability for active cabinets and other network enclosures :

In case of failure of both 230VAC and 48VDC power supplies, the GTCFibre module will be still in capacity to control i/os and send diagnosis thanks to its internal back-up rechargeable battery.

The equipment can be managed by a web server, and is also compatible with SNMP and Syslog protocols. The dedicated software IFOLINK allows the management of the complete range of GTCFibre functions, individually or in a group, for all the devices installed in an area.

KEY POINTS

✓ Network access, Ethernet switch:

- 2 100/1000 optical ports via SFP
- 2 RJ45 10/100/1000Base-TX ports
- 2 RJ45 10/100Base-TX POE+ ports

✓ Double power supply : 230VAC - 48VDC and integrated backup battery

✓ 230VAC (voltage, current, power, cosϕ, harmonic levels) and 48VDC power supplies

✓ Energy supply meter interface with tele-information display (depending on meter type)

✓ Humidity and temperature meter with remote digital sensor (included)

✓ 10 contact-closure inputs - 5 contact-closure outputs

✓ 1 0-10VDC/ 4-20mA input

✓ 1 analog 0-60VDC input

✓ 2 0-10VDC outputs – 1 contact-closure PWM output

✓ 2 RS232/RS422/RS485 serial ports, 1 dedicated port for radio interface, 1 USB console port

✓ 3 independent power supply controls

✓ Management via HTTP, SNMP and TELNET etc

✓ Available option:

- Remote Optical Access switch kit for a remote cabinet control (uses second SFP cage)

✓ Compatible with DIN rail for mounting in electric cabinets: width 12 modules

TECHNICAL SPECIFICATIONS

APPLICATIONS	
2 serial links multi-protocols	
Function	Serial line
Type of signal	Configurable RS232, RS422, RS485
Configuration	Software controls
Speed	Standard up to 115kbds
Protocol	MODBUS, JBUS, (contact us for other applications)
Connector	1 RJ12 connectors
Tele-information interface with energy sypply meter	
Connection	Electricity meter with tele-information output
Type of access	10V 50KHz line modulated AM, input isolated
Speed	1,200 bauds
Ground voltage isolation	3.5KV
Connector	Removable screw terminal block: at 3 points (I1, I2, Ground)
Mains power supply measurements	
Type of measurements	Voltage, current active and reactive power, Cos ø, harmonic levels
Nominal voltage	230VAC
Max. current	< 45 A
Measurement resolution	< 0,1%
Measurement precision	< 1% full scale
Connector	Measurement head: 5 points, capacity 45 A
Voltage measurements of 48VDC power supply	
Measurement type	Voltage input (isolated)
Nominal voltage	48VDC
Max. voltage	60VDC
Measurement resolution	0.1V
Measurement precision	0.5%
Isolation voltage	>2.5KV
Connector	Measurement on 48VDC input Second measurement possible (Battery charger…) on analog input 2
ON-OFF control inputs	
Number of inputs	10 incl. 3 supporting up to 1 kHz signals for meter applications
Type of inputs	2KΩ resistance polarized. Line
Polarisation voltage	12VDC, isolated and common to the 10 contacts
Inputs Level 0	< 1V
Inputs Level 1	> 2V
Ground isolation voltage	1.5KV
Connector	2 removable screw terminal blocks 4 and 8 points

ON-OFF command outputs	
Number of outputs	5
Type of outputs	Isolated static relays
Output connections	2 independent outputs + 3 lines with common points (configurable with selector 1➔3)
Max. voltage	±60VDC or 60VAC peak
Max. current	1A
Max resistance (ON)	< 500 mΩ
Max. power leak (OFF)	< 1µA
Ground isolation voltage	> 1.5KV
Connector	Removable screw terminal block 8 points
Temperature and humidity meter	
Analog wired sensor	**GTCSonde-ANA-T analog probe for temperature measures**
External sensor	Remote LM135 wired circuit (integrated polarisation resistance on the circuit Ipol≈1mA)
Resolution	0.5%
Precision	± 2°C
Isolation	Not isolated
Sensor connection	Screw terminal block
Remote sensor via digital bus	**GTCSonde-NUM-T+HR probe**
Measurement parameters	Relative humidity and temperature
Temperature range	-20 to +85°C
Resolution	0.5°C
Measurement precision	± 1°C
Relative humidity range	0 to 100%
Measurement precision	± 3% (between 20 and 80%)
Isolation	Not isolated
Connector	RJ22

Analogue inputs 1 (0-10V / 4-20mA) and 2 (0-60VDC)			
Type of measurement	**Isolation voltage input**	**Type of measurement**	**Current 4-20 mA**
Max. voltage	10VDC (input 1) and 60VDC (input 2)	Max. current	30mA
Measurement resolution	0.1V	Measurement resolution	0.1mA
Measurement precision	0.5%	Measurement precision	0.5%
Input impedance	>40 kΩ	Input impedance	500 Ω
Isolation voltage	>2.5KV	Isolation voltage	>2.5KV
Connector	Removable screw terminal block 2 points	Connector	Removable screw terminal block

Analogue outputs	
2 outputs	0—10VDC
Resolution	10 Bits
Output impedance	1 kΩ
Precision	± 0.2V
Isolation voltage	> 2.5KV
Connectors	Screw terminal block
Mains power supply commands	
Type of command	230VAC power switch
Number	3 independent
Max. current	4A - with fuse protection
Max. power	1,000W on resistive charge
Commutation component	Electromechanical relay
Isolation voltage	> 1.5KV
Connectors	Screw terminal block
Specific interfaces	
Auxiliary output	High-speed contact-closure output compatible with a PWM command
Connector	Screw terminal block
RS 232 port	Console port or extension for external devices (radio communication radio or GPRS etc.)
Connector	RJ12
USB port	Console port or extension for external devices (radio communication radio or GPRS etc.)
Connector	Micro USB
NETWORK INTERFACES	
Copper ports	
Number of accesses	2 Ethernet 10/100/1000Base-TX ports and 2 ports Ethernet 10/100Base-TX POE+ ports
Standards	IEEE 802.3
Characteristics	10/100Base-TX, Auto MDI-MDIX
Connectors	RJ45
Optical port	
Access	2 Gigabit Ethernet SFP cages, one of which is equipped with a 1000BaseBX-U Ethernet SFP (20Km range, optical budget >14dB). Second optical port: see SFP IFOTEC catalogue
NETWORK PROTOCOLS *(Compatibility with protocols and examples of functions depending on installed firmware)*	
IP, TCP, UDP, ICMP, ARP, DHCP, HTTP, SNMP V1, SMTP, TELNET	
EXAMPLES OF EMBEDDED SOFTWARE FUNCTIONS	
Data records collected over periods of more than 15 days in the GTCFibre module; automatic transfer to a server	
Compatibility with operating systems of the market	
SNMP management protocol, MIB included	

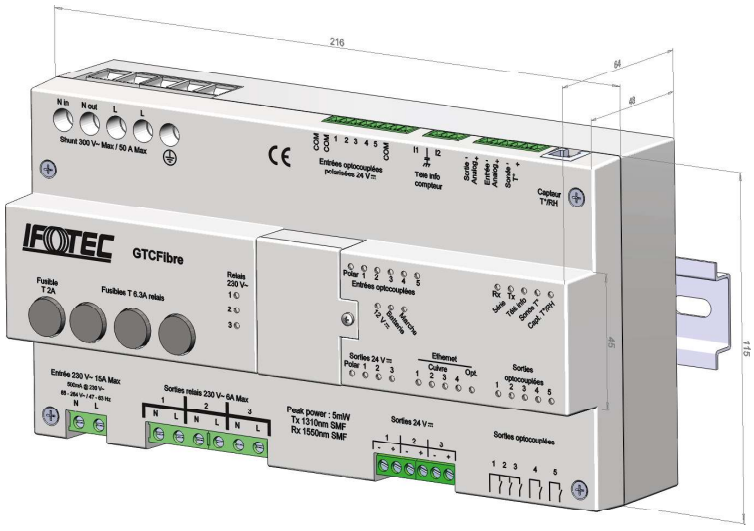
Data processing and creation of graphs and tables in real time on the module and through the server
Long-term data records preserved on a robust and accessible database
Simple access by “web page”, different headings available:
> general page featuring all the current module parameters: Site address; date; time; integrated battery condition; T°, humidity (curves with navigation + table)
> “meter” page featuring information about mains power supply meter: Meter information; Energy used: curves with navigation + tableau; network analysis information: U, I, cos Phi, harmonics
> application page featuring information specific to selected use as for example:
>> Network nodes/Shelter/POP with automated outputs depending on the T° for energy consumption optimized heating/cooling
> system page featuring module parameters: Configuration, automatic date and time settings by SNTP; network parameters; software updates
Secured information access with different levels of user authentication
Automatic configuration upload with TFTP to start up using DHCP options. The configuration (text) file can be interpreted and modified. Possibility to configure different function modes and allocation of inputs/outputs.

HOUSING AND ENVIRONMENT	
Housing	
Type of housing	Compatible for mounting on DIN rail in a distribution board
Width in the rack	12 modules of distribution board
Depth	65 mm
Hight	115 mm
Environment	
Operating temperature	- 20; + 60°C
Storage temperature	- 40; + 85°C
Relative humidity	0 to 85 % (not condensated)

EQUIPMENT POWER SUPPLY	
Module power supply	
Type of power supply	Double mains power supply 230VAC or 48VDC.
Mains power supply voltage	85 to 265VAC
Continuous power supply voltage	36 to 60VDC
Max. power	10 Watts (excluding power supplied by mains supply charges)
Power supply connection	Screw terminal block
Battery	
Type of battery	NiMH
Charger	Internal via mains power supply
Charging time	15 hours for complete charge
Battery life	> 10 minutes (for automatic cut-off after alert is sent)
Functioning on battery	Diminished functions: analog and power outputs are no longer active.

Guarantee	
Production location and after sales service	Voiron (France)
Guarantee	3 years
Guarantee information	https://www.ifotec.com/support/

DIMENSIONS



ORDERING INFORMATION

Reference	Application	Optical connection	Power supply
GTCFibre-2G4R-103	Centralised technical management module with delivered with analog and digital probes	According to SFP inserted	Mains power supply 230VAC and 48VDC and internal battery

Measurement probe references for maintenance

Reference	Application	Power supply	Connection
GTCSonde-NUM-T+HR	Remote relative humidity and temperature sensor via digital bus	Via the GTCFIBRE device, digital sensor access	RJ22
GTCSonde-ANA-T	Remote temperature sensor	Vial the GTCFIBRE device, digital sensor access	Removable terminal block

SFP SELECTION TABLE

For more information, see our SFP data sheet

Reference	Number and type of fibres	Transmission	Wavelength (Tx/Rx)	Max. Distance*	Connec-tion
SFPL-1GD31-20	2 single mode optical fibres	1000Base-LX	1310 nm	20 km	LC/PC
SFPL-1GX31-20	1 single mode optical fibre	1000Base-BX-U	1310 nm /1550 nm	20 km	LC/PC
SFPL-1GX49-20	1 single mode optical fibre	1000Base-BX-D	1490 nm /1310 nm	20 km	LC/PC
SFPL-FED31-20-VB	2 single mode optical fibres	100Base-FX	1310 nm	20 km	LC/PC
SFPL-FEX31-20-VB	1 single mode optical fibre	100Base-BX-U	1310 nm /1550 nm	20 km	LC/PC
SFPL-FEX55-20-VB	1 single mode optical fibre	100Base-BX-D	1550 nm /1310 nm	20 km	LC/PC

** for longer distances please consult us*