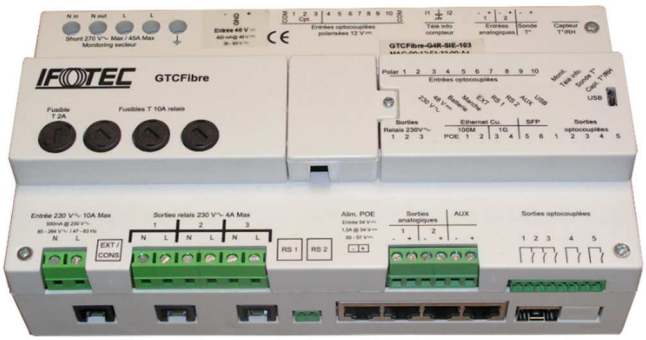
CENTRALISED TECHNICAL MANAGEMENT MODULE USING OPTICAL FIBRE

GTCFibre-G4R-104 " Public lighting "

- **Power supply and energy control 230VAC**
- **Integrated backup battery**
- **Optic access SFP 100/1000 IP, 2 ports 10/100/1000TX, 2 ports 10/100 POE**
- **Climate meter**
- **Multiple contact closure command-control input-outputs, serial, analog**
- **Local and remote measurement records**



Other version presented (G4R-103)- Photo non binding

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 cabinets and public lighting equipment.

With 5 Ethernet switches for connecting equipment to a network or IP equipment:

- **1 SFP optical port (SFP 1000Base-BX-U recommended)**
- **2 10/100/1000Base-TX ports**
- **2 10/100Base-TX POE+ ports**

The equipment uses the mains power supply and has a power monitoring device:

- **Energy meter with tele-information interface**
- **Integrated mains power supply measurement: voltage, current, active and reactive power, harmonics,…**

Multiple command-control inputs and outputs:

- **10 opto-isolated contact-closure inputs**
- **1 analog input 0-60V isolated**
- **1 analog input 4-20mA**
- **1 input for analog temperature probe (included)**
- **1 input pour temperature & humidity sensor (included)**
- **5 contact-closure outputs opto-isolated**
- **1 output for individual control of the light points (DALI protocol)**
- **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:

- **3 230VAC mains power supply applications**

The product is perfectly adapted to be installed in public lighting cabinets.
Powered by mains power, an **integrated battery** provides back-up in the event of a power shortage.

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

FUNCTION

- Interface for centralised management of optical fibre and Ethernet networks.

KEY FEATURES

- Network access, Ethernet switch:
  - 1 100/1000 optical port via SFP
  - 2 RJ45 10/100/1000Base-TX ports
  - 2 RJ45 10/100Base-TX POE+ ports
- Power supply 230VAC - 48VDC and integrated backup battery.
- Monitoring 230VAC power supply: voltage, current, power, cosφ, harmonic levels.
- Energy supply meter interface with tele-information display.
- Analog input for remote temperature measurement (probe included).
- Humidity and temperature meter with remote digital sensor (included).
- 10 contact-closure inputs - 5 contact-closure outputs
- 1 analog 0-60VDC input
- 1 4-20mA input
- 2 0-10VDC outputs
- 1 DALI control output
- RS232/RS422/RS485 serial ports, 1 dedicated port for radio interface, 1 USB console port.
- 3 power supply controls.
- Management via HTTP, SNMP and TELNET etc
- Compatible with DIN rail for mounting in electric cabinets: width 12 modules.
- Manufacturing and after-sales service: Voiron (France)
- Product guarantee: 3 years

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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	RJ12

TELE-INFORMATION INTERFACE WITH ENERGY SUPPLY 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

CONTACT CLOSURE INPUTS

Number of inputs	10
Type of inputs	Line polarised with 2KΩ resistance.
Polarisation voltage	24VDC, **isolated** and common with 5 contacts
Inputs Level 0	< 1V
Inputs Level 1	> 2V
Ground isolation voltage	1.5KV
Connector	Removable screw terminal block:

CONTACT-CLOSURE OUTPUTS

Nombre de sorties	5
Type de sorties	Relais statiques **isolés**
Raccordement des sorties	2 sorties indépendantes + 3 lignes avec point commun (configurables en sélecteur 1➔3)
Tension max	±60VDC ou 60 VAC crête
Courant max	1 A
Résistance max (ON)	< 500 mΩ
Courant de fuite max (OFF)	< 1µA
Tension d'isolation à la masse	> 1,5KV
Connecteur	Removable screw terminal block:

CLIMATE 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 (option)	**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

ANALOG INPUTS

Type of measurement	**Isolation** voltage input	Type of measurement	30mA
Max. voltage	60VDC	Max. current	0.1mA
Measurement resolution	0,1V	Measurement resolution	0.5%
Measurement precision	0,5%	Measurement precision	500 Ω
Input impedance	>200 kΩ	Input impedance	>2.5KV
Isolation voltage	>2,5KV	Isolation voltage	Removable screw terminal block
Connector	Removable screw terminal block	Connector	

ANALOGUE OUTPUTS

2 outputs	0—10VDC
Resolution	10 Bits
Output impedance	1 kΩ
Precision	± 0.2V
Isolation voltage	> 2.5KV
Connectors	Removable screw terminal block

MAIN POWER SUPPLY COMMANDS

Type of command	Contact closure
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	Removable screw terminal block

SPECIFIC INTERFACES

DALI output	Output to control the operation of the light points according to the DALI protocol
Connector	Screw terminal block
Radio interface	Interface série RS232 pour modules de communication radio ou GPRS
Connector	RJ12
Interface console	Port USB
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	SFP port compatible with Gigabit Ethernet: see SFP IFOTEC catalogue

NETWORK PROTOCOLS *(Note 1)*

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 technical CPE; automatic transfer to a server
- Compatibility with operating systems (Netadmin, Syecl etc.)
- SNMP management protocol, MIB included
- Data processing and creation of graphs and tables in real time on the module and server
- Long-term data records preserved on a robust and accessible database
- Simple access in “web page” format categorised by sections:
  - general page featuring all the current CPE 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:
    - direct public lighting with astronomic function/with variator and table of input/output switches
  - system page featuring technical CPE 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.

Note 1 : Compatibility with protocols and examples of functions depending on installed firmware.

As part of our ongoing quest to improve our products, we reserve the right to make modifications we consider useful without notice.

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	Mains power supply 230VAC
Mains power supply voltage	85 to 265VAC
Puissance max	10 Watts (hors puissance fournie aux charges alimentées par le secteur)
Connecteur d'alimentation	Screw terminal block (Ph, N, Terre)

BATTERY

Type of battery	NiMH
Charger	Interne par l'alimentation secteur
Charging time	15 heures pour une charge complète
Battery life	> 10 minutes (pour arrêt automatique après envoi de message d'alarme)
Functioning on battery	Central unit and network access. The application inputs and outputs are not active.

REFERENCE TABLE:

MODULE

Reference	Application	Alimentation	Optical connection
GTCFibre-G4R-104	Centralised technical management module with delivered with analog **GTCSonde-ANA-T**	Mains power supply 230VAC and internal battery	According to SFP

Measurement probe references for maintenance

Reference	Application	Alimentation	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

GTCSonde-NUM-T+HR

GTCSonde-ANA-T

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