

## FRCM-NB1-GSM - NB-IoT, GSM compatible, lighting panel control and monitoring unit

Installed inside the feeder pillar, it is designed to provide autonomous operation for street lighting installations and to carry out three phase measurements and analysis of electrical parameters in street lighting grids.

- › Specially designed and optimized for LPWA networks.
- › VPN security with AES128-bit encryption and key rotation.
- › Bandwidth efficient with minimal communication requirements.
- › Autonomous operation based on predefined astronomic calendar and/or external light level sensor (digital INPUT).
- › Remote real-time ON/OFF control.
- › Remote monitoring of grid parameters in street lighting grids: per phase voltage, current, frequency, power factor, active/ reactive/ apparent power, daily active/ reactive energy consumption.
- › Configuration options for: current transformer ratio, voltage/power thresholds and daytime/ nighttime consumption thresholds.
- › LCD for displaying electrical parameters and device status.
- › GPS for exact location and time.
- › Maintenance switch for local manual override (AUTO/ON/OFF).
- › Inputs: 2 x Digital INPUT.
- › Output: 1 x Dry contact relay output (230V, max 3A).
- › Designed lifetime: 10+ years.
- › TALQv2 certified solution.

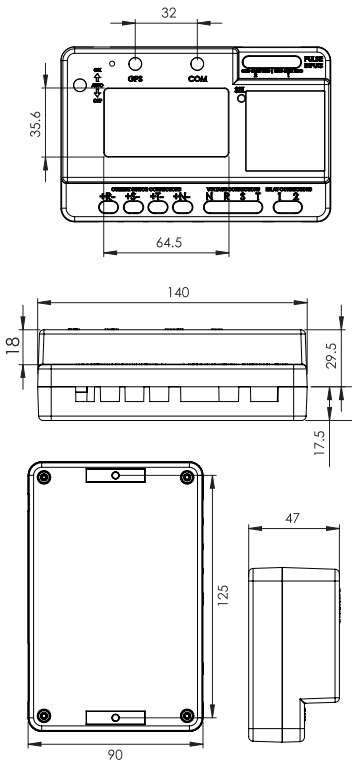




## FRCM-NB1-GSM

|                                 |  |
|---------------------------------|--|
| Power supply                    | 85- 260VAC / 50-60 Hz  |
| Local interface                 | USB  |
| Network interface               | NB-IoT / GSM   |
| Supported frequencies           | worldwide  |
| Internet protocol version       | IPv4/IPv6  |
| Display                         | LCD  |
| Firmware update                 | OTA (over the air)   |
| GNSS                            | Geolocation and precision time (GPS, GLONASS, BeiDou, Galileo and QZSS)  |
| Security                        | AES128-bit encryption and key rotation per session (AES256-bit optional)   |
| Surge protection                | max 6kA (IEC 61000-4-5)  |
| Internal scheduling memory      | 16 events (daily / weekdays / weekends / fixed date / exceptions)  |
| Measurement accuracy            | MID grade (±1%)  |
| Power consumption               | Max. 10 W  |
| Precision Real Time Clock (RTC) | Yes, battery operated  |
| Battery operation time          | up to 2 hours  |
| Input                           | • R, S, T voltage inputs • R, S, T, N current inputs • 2 x Digital input   |
| Power network type              | Three phase electric network and Neutral   |
| Current transformers            | Standard X:5, where X is user definable  |
| Digital input                   | 2x Dry contact relays or active inputs 5-12V (any combination)   |
| Output                          | 1 x Dry contact relay (230V, 2-16A depending on load type)   |
| Light sensor                    | Optional- externally connected   |
| Connectors                      | • Voltage (R,S,T,N) • Current (R,S,T,N) • RF / GPS / USB   |
| Grid connectors                 | 2.5 mm <sup>2</sup> terminals  |
| Antennas                        | 2 x SMA  |
| Ingress protection              | IP20 (IEC 60529) (optional IP67 external housing)  |
| Operating temperature           | -25°C to + 70°C  |
| Operating humidity              | 95% non-condensing   |
| Weight                          | 320 ± 5 g  |
| Dimensions (L x W x H)          | 138 x 90 x 47 mm   |
| Mounting                        | DIN RAIL   |
| Compliant standards             | • RED Directive: LVD Directive & protection of health (EN IEC 62368-1, EN IEC 62479), EMC Directive (ETSI EN 301 489-1, ETSI EN 301 489-2), Efficient use of radio spectrum (ETSI EN 301 908-1, ETSI EN 301 908-13, ETSI EN 301 511, ETSI EN 303 413) • RoHS Directive • Environmental Testing: EN 60068-2-1, EN 60068-2-2 |
| Certifications                  | CE   |

### DIMENSIONS (mm):



### CERTIFICATIONS:



### MEASURED PARAMETERS:

- > voltage
- > current
- > active power
- > reactive power
- > apparent power
- > active energy
- > reactive energy
- > power factor
- > frequency

### CONFIGURABLE PARAMETERS:

- > current transformer ratio
- > voltage/power / current thresholds
- > daytime/ nighttime consumption threshold

### ALARMS MONITORED:

- > over/ under voltage detection
- > over/ under power detection
- > over/ under current detection
- > unusual daytime/nighttime consumption
- > phase failure
- > cabinet door open sensor

### ELECTRICAL CONNECTIONS:

