plum GAS

MacREJ 5 R

electronic gas volume data logger

MacREJ 5 R is a solution designed to transmit in real time information about gas consumption on the station to the head-end systems or SCADA using remote transmission by internal 4G modem or serial communication in Modbus protocol.

MacREJ 5 R is compatible with any type of gas meter having pulse outputs and also digital transmission thanks to support of digital communication by Encoders.

key benefits

- uninterrupted and stable multiple data transmission channels
- possibility to use with any gas meter on the market
- easy and quick adaptation to the automatic process of the industry thanks to Modbus compatibility and real time data exchange
- work with multiple data exchange platforms in the same time without impact on the readings accuracy and other communication channels
- inbuilt mechanism of gas meter load profile reporting if the meter size is adjusted properly

technical data

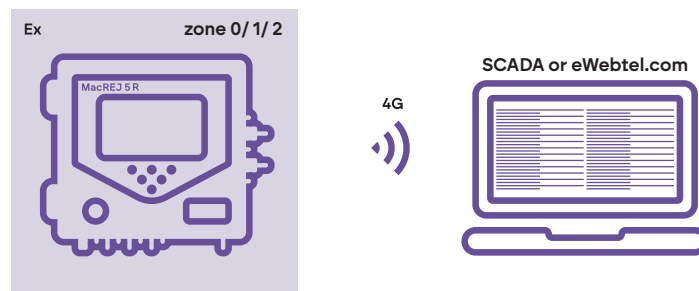|	
housing material	poycarbonate
dimensions/ weight	207 x 194 x 77 mm/ 1.3 kg
relative humidity	maximum 95% at temperature of 70 °C
ambient temp. range	from -25 °C to 70 °C
housing protection class	IP66 for outdoor installations
keyboard	6 pushbuttons
display	graphical, 4", backlight, operation in the full range of operating temperatures
Ex feature	II 1G Ex ia IIB T4 Ga certificate: FTZÚ 17 ATEX 0047X
internal power supply	3 lithium D-size batteries: • 1 battery to supply data logger • 2 batteries to supply internal modem
external power supply	dedicated interface INT-S3, intrinsically safe power supply source for data logger and internal modem at the same time; technical data: 11÷30 VDC input voltage, 5.7 VDC output voltage (Ex side), inputs and outputs separation, transmission separation
transmission protocols	Modbus RTU, Modbus TCP (available in version with integrated modem), GAZ-MODEM 1, 2, 3 (other protocols per request)
transmission ports	• three independent serial transmission ports (2x RS485 Ex port), baud rate up to 256 kb/s, optical interface IEC 62056-21 • NFC IEC 14443 interface • optional integrated modem 4G LTE/ 2G
resistance to mechanical and electromagnetic conditionse	M2/ E2
horizon of data registration	• data registered in period 1-60 minutes – 55000 records (over 6 years @60min) • hourly data – over 2 years • daily data – over 4 years • monthly data – over 10 years • alarms/ events memory – over 6000 records

control outputs	• up to 4 intrinsically safe, configurable digital outputs (OC type):
	  - 1 configurable as binary or frequency (0÷5000 Hz) output
	  - 3 binary outputs
	• binary outputs triggered by alarm/event or counter
	• frequency output triggered by measured value (Qm, Qm2 etc.)

inputs	• up to 6 (5 by default) intrinsically safe, configurable, binary digital inputs, shared with:
	  - 2 LF inputs, frequency 0÷2 Hz, WIEGAND standard 0÷60 Hz (option), flow direction detection
	• optional, up to 2 intrinsically safe, configurable digital inputs NAMUR type (EN60947-5-6):
	  - 2 binary inputs, work with NAMUR proximity sensors on battery mode; 1 input shared with ENCODER (NAMUR type)

accessories	• eWebtel - measuring data acquisition system • ConfIT! PC- configuration software for PC • ConfIT! data loggers - mobile application • OptoBTEx - optical interface • INT-S3 - signal barrier, power supply source, transmission interface • IK-401 - industrial router/ communication interface 4G

features

- optional built-in modem for 4G LTE Cat.1 and 2G networks
- support for proximity NFC communication standard, optical interface link, and two RS485 serial links
- 4" graphical display with backlight, works in temperatures down to -30 °C
- configurable widgets presenting gas consumption, gas meter load profile in form of bar graphs
- ATEX-certified, suitable for operation in any explosion hazard zone (up to zone 0, 1, 2), no modem influence on the ATEX class
- compatibility with rotary, turbine and diaphragm meters using LF pulses and digital communication with gas meter by Encoder (option)
- low operating costs thanks to the use of standard lithium batteries
- integration with BMS, SCADA, automatic systems, external platforms using Modbus RTU/TCP

application

- **direct data transmission to the system**

  Data transmission via the built-in 4G LTE modem.

  Ex   zone 0/ 1/ 2

  MacREJ 5 R   4G   SCADA or eWebtel.com

- **application diagram**

  MacREJ 5 R   4G   SCADA or eWebtel.com

  building management system (BMS)

  INT-S 3

  shut-off valve

  filter sensor

  regulator

  gas meter