Energy sector

DATA LOGGER WITH GSM FOR AMR

X4-G2

- For use in hazardous areas ATEX Zone 2
- Multi-channel data logging
- Integrated GSM modem for remote communication (SMS, GPRS, all continents)
- Low power operation for extended battery life (up to 10 years)
- Built-in ambient temperature monitoring, optional external sensor connection

Iskra®

PROPERTIES

- AMR for volt-free pulse emitting meters (refer to version X4-G for gas)
- For use in hazardous areas ATEX Zone 2
- Multi-channel data logging
- Integrated GSM modem for remote communication (SMS, GPRS, all continents)
- Low power operation for extended battery life (up to 10 years)
- Self monitoring and status alarming
- Built-in ambient temperature monitoring, optional external sensor connection
- Input-to-output pulse replication
- Optional support for data readout from other external devices via local serial communication
- Compact tamper-evident housing for wall or panel mounting
- Simple installation with easily accessible terminals

DESCRIPTION

GSM AMR Data Logger X4 family is an integral part of any AMR, energy management or monitoring system, which utilizes pulse emitting meters in hazardous area. The type X4-G2 can be installed in ATEX Zone 2 environment.

The device integrates a pulse collector, a data logger and a GSM modem in a single unit. It can collect data from up to four volt-free pulse emitters. It also supports local data readout from other metering equipment via local serial communication.

The unit is battery powered and can operate up to 10 years. Enhanced user-configurable retry strategy and optional external antenna improve data reliability in signal-critical areas. The device supports GSM operation in all continents (quad-band GSM), broadcasting data by SMS or optionally GPRS.

Easily accessible terminals, standard RJ-type connectors and active LED indicators (connection presence, GSM signal level, battery level etc.) enable simple and quick installation process. The device has built-in extended options for status monitoring and alarming (low and high flow detection, tampering). Extensive configuration options for data logging (e.g. configurable rolling register, load snapshots) with advanced time management (e.g. arbitrary data capture intervals, automatic time sync) are available for the most demanding data-readout scenarios. Sixteen fully customizable schedules and the support for remote manipulation via GSM enable easy management of data and maintenance services.

FUNCTIONAL AND TECHNICAL FEATURES

INPUTS

- Four pulse inputs for direct interfacing with up to four utility meters
- Volt-free pulse type inputs are accepted (Reed switch, solid state or Wiegand)
- each input is configurable for pulse or tamper mode (standard use two pulse/tamper pairs)
- input frequencies: min. pulse width = 1 ms; min. gap between pulses = 30 ms
- use of standard RJ10 compatible connectors

OUTPUTS

- Four intrinsically safe isolated volt-free outputs: two electronically controlled for pulse replication, two hard-wired for tamper detection,
- Standard RJ11 connectors,
- Any pulse input can be replicated to any of two pulse replication outputs,
- configurable pulse duration (1 - 255 ms),
- current sinking output capable of accepting 30 V, 50 Ma.

DATA CAPTURE AND LOGGING

- instant real-time meter value and scaled value readout,
- ambient temperature logging (a channel for built-in sensor, optional channel for external sensor),
- 10 independent channels (4 pulse inputs, 6 virtual),
- accumulated or differential logging per channel,
- Configurable logging intervals: arbitrary 5 to 240 min (1 min resolution), 6, 12, 24 hour,
- daily load profiles, configurable rolling register, configurable snapshots for each channel,
- Storage capacity: 670 days of 30-minute daily data for each channel.

DATA DELIVERY

- GSM operating on all continents with internal antenna, optional external antenna connector,
- the use of SMS for lowest-power data delivery (up to 10 years), optional GPRS,
- up to 16 configurable data delivery schedules,
- configurable periodical wake-up window allows for remote management,
- programmable retry strategy with enhanced retry algorithm for high reliability,
- multi-layer custom protocol for reliable data exchange (SMS data fragmentation).

DEVICE STATUS AND ALARMS

- device is tracking system events and data exchange transactions (e.g. system resets, successful/failed SMS deliveries, tamper, FLAG port access, etc.)
- alarms: battery low, tamper, CPU Reset, SIM Change, clock change, SMS spam message, flag port activated, pulse rate alarm.

INFRARED OPTICAL PORT (IEC 62056-21)

- Local data read-out of the historic records for each channel,
- Local configuration of the unit during installation or maintenance.

AUXILIARY SERIAL PORT (OPTIONAL)

- optional support for data readout from other electronic metering devices: external temperature sensor, pressure sensor, gas corrector,
- Intrinsically safe serial communication (UART 3.5V TTL).

CONNECTIONS

Pulse inputs: RJ10 / 4P4C compatible
Pulse outputs: RJ11
External sensor: RJ10 / 4P4C compatible
Auxiliary serial port: 4-pin 2mm male header polarized

AMR COMMUNICATION INTERFACE

Integrated GSM Quad-band 850/900/1800/1900 MHz modem.

POWER SUPPLY

Factory supplied LiSOCl2 battery 3.6 V, size D.
Estimated battery life 10 years (reference conditions, one SMS per day).
Easy replacement of the battery on site.

EASY INSTALLATION & COMMISSIONING

Easy access to terminal, Two-point fixing to the wall or panel.
Field setup of the unit using HHU or PC.
Quick diagnostics / battery replacement reset without HHU or PC.

ENCLOSURE

Made of high durability material.
Protection level against dust and water penetration, options: IP 21 (IP 54 optional).

PROTECTION AND SAFETY

Tamper-evident sealed terminal cover is preventing access to the fixing screws and terminals.

TECHNICAL SUMMARY

ATEX specified	
GSM bands	850/900/1800/1900 MHz
Number of pulse inputs	4
Number of pulse outputs	2
Minimum pulse input ratio	1 ms/30 ms
Output pulse width	1-255 ms
Pulse output connection ratings	30 V, 50 mA
RTC accuracy	±10 ppm
EMC	EN 61000-6-2 & EN 61000-6-3
Operating temperature range	-20 °C … +60 °C
Extended operating temp. range (with reduced functional set)	-40 °C … +60 °C
Storage temperature range	-40° C … +75° C
Ambient humidity:	<75% annual mean
Dimensions (W x H x D)	170 x 168 x 48 mm
Mass	approx. 0.40 kg

COMPLIANCE WITH DIRECTIVES AND STANDARDS:

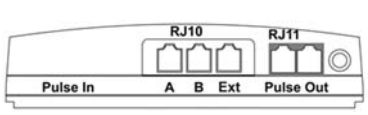
Directives / Standards
ATEX (Group II Category 3G Ex ic IIC T4 Gc, -40°C < Ta < +60°C)
R&TTE
WEEE
EN 60079-0: 2012
EN 60079-11: 2012
EN 60079-26: 2007
IEC 60079-0: 2012
EN 61000-6-2: 2005
EN 61000-6-3: 2007

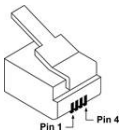
TECHNICAL DATA

EU DIRECTIVES

Directive **2014/35/EU** on low voltage.
Directive **2014/30/EU** on electromagnetic compatibility.
Directive on RoHS **2011/65/EU**.
Directive on ATEX **2014/34/EU**

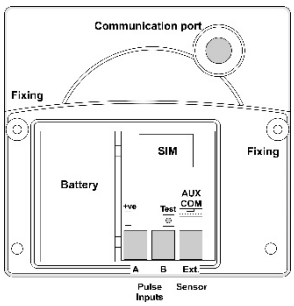
INSTALLATION INFO

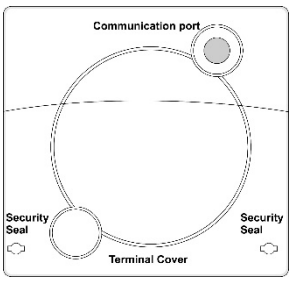




Input A:
pin 1 minus channel 3
pin 4 plus channel 3
pin 2 minus channel 1
pin 3 plus channel 1

Input B:
pin 1 minus channel 4
pin 4 plus channel 4
pin 2 minus channel 2
pin 3 plus channel 2





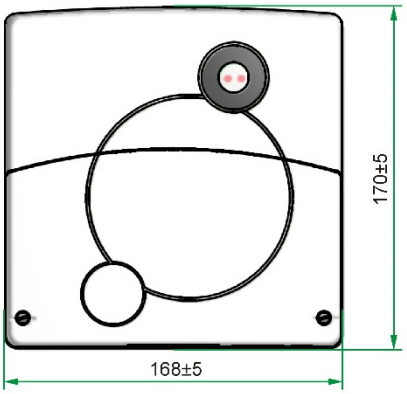
Detailed information with intrinsically safety parameters is specified in Installation Requirements.

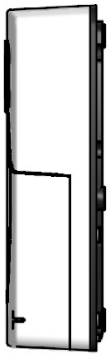
DATA FOR ORDERING

When ordering the meter, all required specifications shall be stated in compliance with the ordering code. Ordering code for the product is stated bellow:

X4-G2 (022451001008)

DIMENSIONAL DRAWING





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