OKO x305
Operation Manual

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1. CONDITIONS OF USE

INSTRUCTIONS - all the safety and operational instructions should be read before the product is operated.

TRANSPORT – every item removed from the multi-pack must be properly secured (e.g. with bubble wrap) for further transport.

ACCESSORIES – the mounting of the product should follow the manufacturer's instructions and should use mounting accessory recommended by the manufacturer.

RECYCLING – the used devices should be returned to the manufacturer for proper disposal.

REPLACEMENT PARTS – when replacement parts are required, make sure that only replacement parts specified by the manufacturer are used.

WARRANTY – failure to follow the instruction or any modifications/alternations in the operations described in this instruction may void the warranty.

SPECIAL USAGE CONDITIONS

- Storage temperature:
−40 °C ÷ +60 °C [OKO X305-9**3]
−40 °C ÷ +70 °C [OKO X305-F**3]
- Operating temperature:
−25 °C ÷ +55 °C
- Never rub the enclosure surface of OKO X305 using a dry cloth because of the danger of electrostatic discharge
- The procedures of installation, battery replacement, SIM card replacement or uninstallation cannot be performed in explosive atmospheres.
- For versions with SMA connectors operating in explosive atmospheres make sure that the connector is protected with non-conductive material and its metal parts are not accessible.

2. GENERAL DESCRIPTION

OKO X305 is a part of a universal IMR Smart Gas Metering system dedicated for registering gas consumption and wireless data transmission. This battery powered, ATEX certified data logger can be installed on new or existing diaphragm meters equipped with pulse output. It takes pulses from the meter and transfers the data over GPRS/SMS to acquisition server periodically (e.g. daily at specified time). Flexible configuration permits for customization of logged data structures and communication pattern for specific Gas Utility needs. Its Bluetooth 5.2 module allows data collection, on-site configuration and diagnostics with the use of dedicated mobile application. User friendly structure of OKO X305 and its HMI makes it intuitive and easy to set up. The client, with minimal instruction, is able to perform all required operations and manage the system unassisted.

3. CERTIFICATES

OKO X305 is intended for use in potentially explosive atmospheres:

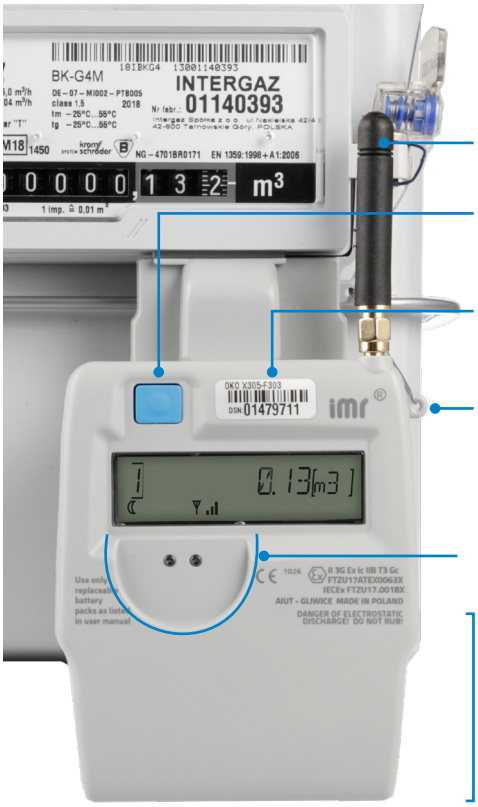
- Ex II1G Ex ia IIB T3 Ga [OKO X305-9**3] version dedicated for Zone 0
- Ex II 3G Ex ic IIB T3 Gc [OKO X305-F**3] version dedicated for Zone 2

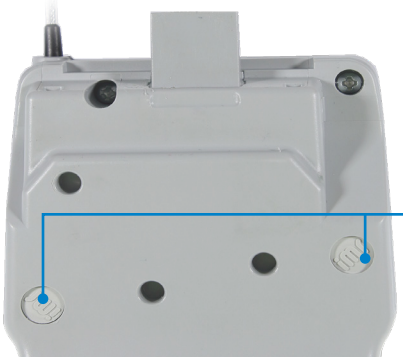
The product complies with the essential requirements of the following directives :

- ATEX (directive 2014/34/UE)
- RED (directive 2014/53/UE)
- EMC (directive 2014/30/UE)
- UKSI 2016:1107 (as amended by UKSI 2019:696)

Click to see the certifications

4. THE STRUCTURE OF THE DEVICE





SMA ANTENNAS (optional)

OVERPRINT

OKO X305 - F303-0123 — Order number
S/N: 01256376 — Serial number
Barcode, code 128

ORDER NUMBER

Generic information	Hardware/firmware version
OKO X**x**05	**uvw**0 **y*****

x - type of data transmission

3 - 2G/SMS/GPRS

u - power supply

9 - battery ABAT (size D MnO_2 3,0V/3W for zone Z0)

F - battery ABAT (size D MnO_2 3,0V for zone Z2)

v - interface for local communication

3 - connector dedicated for adapters with built-in pulse sensor coupled with gas meter counter

5 - Bluetooth module + connector dedicated for adapters with built-in pulse sensor coupled with gas meter counter

w - type of SIM card

0 - external on slot

3 - internal SIM on chip

5 - dual SIM (external +internal)

y - hardware modifications

0 - whip antenna

1 - SMA connector for external antenna

ICON GUIDE

- device in sleep mode (modem off)
- RTC error
- pulse counter error
- low battery level
- device removal detection
- cover opening
- max/min temperature exceeded
- max flow exceeded
- GSM communication
- GSM network available (no cross)
- GSM network not available (cross active)
- logging in (blinking antenna)
- SIM card error (no antenna)
- poor GSM quality (one bar, only SMS)
- good GSM quality (two bars, GPRS available)
- excellent GSM quality (three bars, GPRS available)
- BLE communication

(details in Local Data Access - BLE module)

- magnet tamper detection
- Opto communication

(details in Local Data Access - opto module)

5. TECHNICAL PARAMETERS

GSM modem	Quectel M66
Ingress protection	IP 67
Storage temperature	-40°C ÷ +60°C (OKO X305-9**3) -40°C ÷ +70°C (OKO X305-F**3)
Operating temperature	-25°C ÷ +55°C
Ex marking	Ⓔx II 1G Ex ia IIB T3 Ga (OKO X305-9**3)
(ATEX/UK Ex Regulations/IECEx)	Ⓔx II 3G Ex ic IIB T3 Gc (OKO X305-F**3)
Battery lifetime	10 years
Type of battery	For OKO X305-9**3: ABAT M020-1455-CN00; ABAT L336-1455-CN00; ABAT U346-1455-CN00; ABAT F174-21X5-CN00; ABAT P174-21X5-CN00 For OKO X305-F**3 ABAT M020-16X5-CN00, ABAT U346-16X5-CN00, ABAT L336-16X5-CN00, ABAT P174-26X5-CN00, ABAT F174-26X5-CN00
Dimensions hxwxd	112 (194mm with antenna) x 91mm x 43mm
SIM card	3FF - Micro SIM (15mm x 12mm) and/or MFF2 - eSIM
BLE communication	Bluetooth Low Energy 5.2
RF radio	800 ... 2600MHz
Max radio power	2W

Intrinsically safe parameters

Connector of the adapter	Uo=5,4V; Io= 23mA; Po=30mW; Co=100uF; Lo=1mH Ui=5,4V; Ii=0,2A; Pi=1W; Li, Ci – negligible
SMA connector	Uo=10VAC; Io=0,2A; Po=2W; Co=1uF; Lo=1uH

Replication pulse output (optional)

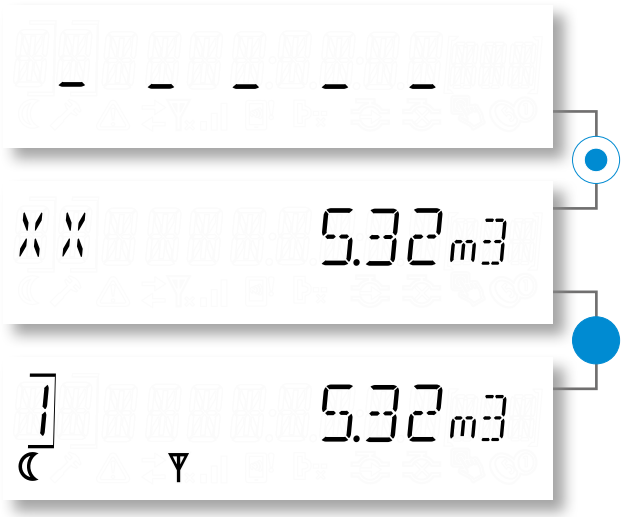
Output port located in dedicated IMR adapter and capable of providing meter pulse output connections to other meter pulse utilization devices. For more please refer to **Replicated Pulse Measurement.**

Circuits	1 intrinsically safe circuit
Connector type	RJ-11 /RJ-9
Circuit type	Open collector output
Max cable length	3 m
Maximum input voltage Ui	30 V
Maximum input current Ii	37 mA
Maximum input power Pi	1,1 W
Maximum internal capacitance Ci	Negligible
Maximum internal inductance Li	Negligible

6. INITIALIZATION

For safe transport and in order to minimize the battery consumption during the storage (prior the installation), the device is in seal-run mode directly after the production. It counts the pulses but no remote communication is performed.

Click or scan to see the tutorial video
vimeo.com/249501516/6a14ca0d5b



Device in seal-run mode. Short press the button.

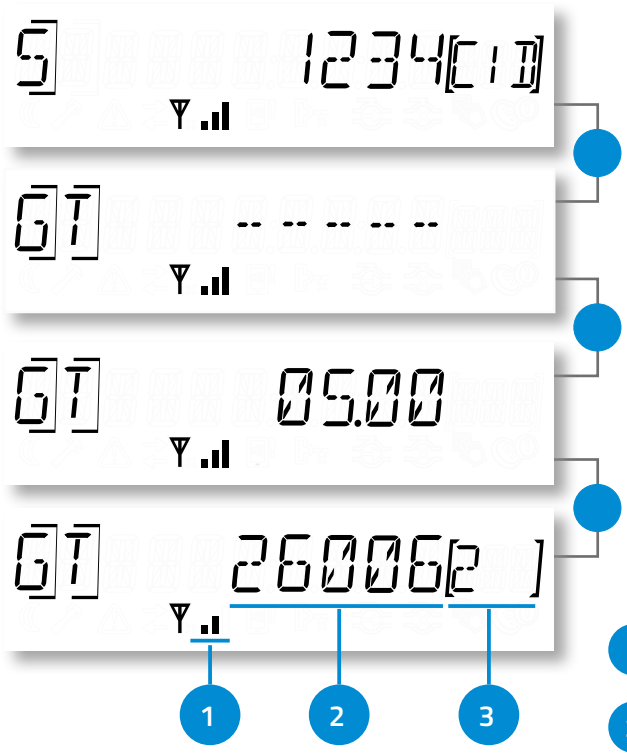
Then, long press the button (for more than 2s) to enter the Main Menu screen.

The device is initialized and ready for operation.

7. GSM TEST

GSM test is performed in order to find the GSM operator that provides the best GSM quality or check the signal quality of the already selected GSM operator. The test is specially recommended in case when more than one SIM card is available.

Click or scan to see the tutorial video
vimeo.com/249495319/1c94f2fd2b



Repeatedly short press the button to enter the 5th screen of the main menu and then long press the button.

Again, long press the button to enter the GSM test screen.

Long press the button to start the test.
Time left is displayed on the screen.

The test is over, short press the button to switch between the screens presenting available operators together with GSM signal quality.

1. GSM signal quality (poor-good-excellent)
2. Unique code of the GSM provider
3. The number of GSM provider displayed on the list of the test result

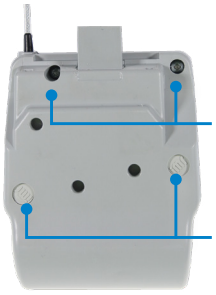
8. INSERTING/REPLACING SIM CARD*

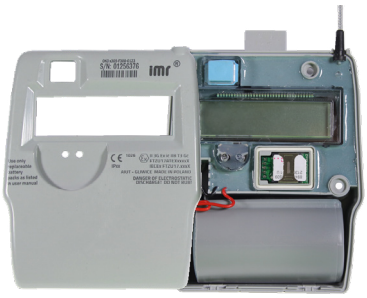
- This device is designed to be used with 3FF micro-SIM card that is smaller than the standard 2FF mini-SIM card. Use of incompatible SIM cards may damage the card or the device, and may corrupt data stored on the card.
- Inserting/replacing SIM card cannot be performed in explosive atmospheres.

3FF-Micro SIM
15mm x 12mm

1 Open the cover

- Remove the seals and screws from the bottom cover
- Gently lift the top cover

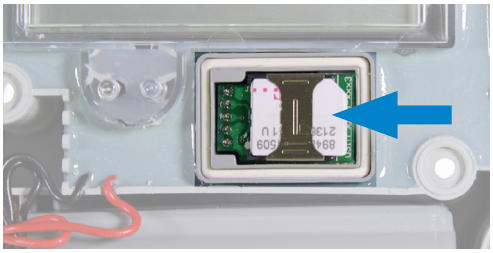




2 Insert the SIM card

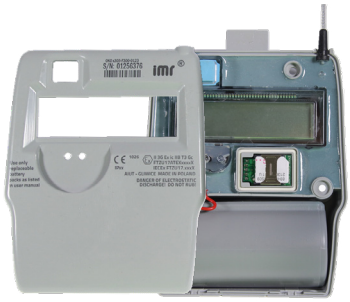
- Hold the SIM card with the cut corner to the top right
- Make sure that the contact area of the card is facing down and slip it into the card holder

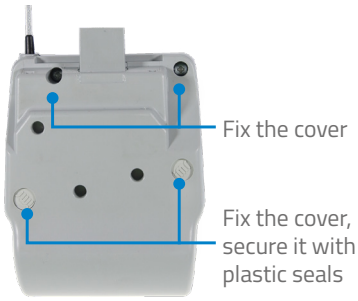
NOTE Do not remove the protective gel from the card holder as it prevents from the corrosion of materials.



3 Close the cover

- Gently close both parts of the cover
- Screw the cover and secure it with two plastic seals





NOTE The PIN code of the newly installed/replaced SIM card bust be written in the configuration of OKO X305. It can be performed with SITA application using the functionality of the head-end system.

NOTE The level of anti moisture gel in the card holder must be checked, and if necessary topped up after every maintenance procedure. We recommend using Anti-Corrosion Gel by SuperLube, Part Number: 82003.

Click or scan to see the tutorial video
vimeo.com/251774341/c4d6ad6453

* The chapter applies only to versions equipped with SIM card slots.

9. DEVICE ACTIVATION

Click or scan to see the tutorial video
vimeo.com/249374665/a655a18d00

In order to minimize the current consumption, modem is in sleep mode and wakes up according to the schedule settings. To do so, long press the button in the first or second screen of the main menu.

NOTE Prior the activation please make sure that SIM card is inserted into the device.

Before activation

- Device in sleep mode
- GSM available – data from previous activation
- GSM quality (poor-good-excellent) - data from previous activation

Modem activated

- Device activated
- GSM available - current data
- GSM quality (poor-good-excellent) - current data

Once the modem is activated it stays active for 120s. If it receives any information within this time period the activation time is prolonged for another 120s. If the data logger receives no information after 120s it returns to sleep mode.

10. MECHANICAL ASSEMBLY

Meter type: INTERGAZ BK

1 Insert the IC E015 adapter on the gas meter.

2 Secure the adapter with a blue seal.

3 Fix OKO to the adapter.

4 Screw and seal OKO with two grey IMR seals on both sides of the cover.

5 Secure the whole set with a plastic meter seal.

Install the seal by threading the wire in the following order: blue seal (1), sealing handle of the adapter (2), sealing handle of the OKO (3), and again, sealing handle of the adapter (4) (optional). Then thread the wire through the seal cylinder (5). Tighten the seal by rotating the plastic wing clockwise. Firmly hold plastic body in one hand and apply lateral force to break off the plastic wing.

Click or scan to see the tutorial video
vimeo.com/251775987/364c62bf09

Meter type: ELEKTROMETAL EM

1 Fix and screw the IC K015 adapter to the gas meter.

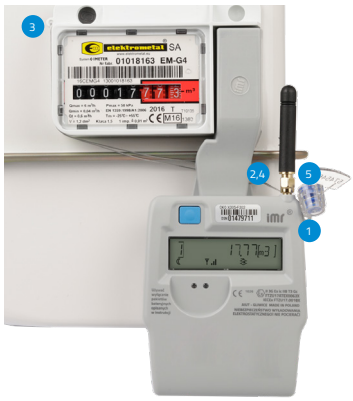

2 Seal the adapter with grey IMR seal.

3 Fix OKO to the adapter.

4 Screw and seal OKO with two grey IMR seals on both sides of the cover.



5 Secure the whole set with a plastic meter seal.

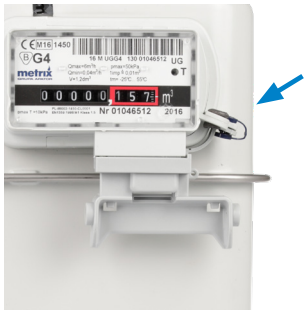


Install the seal by threading the wire in the following order: sealing handle of the OKO (1), sealing handle of the adapter (2), sealing handle of the gas meter (3), and again, sealing handle of the adapter (4) (optional). Then thread the wire through the seal cylinder (5). Tighten the seal by rotating the plastic wing clockwise. Firmly hold plastic body in one hand and apply lateral force to break off the plastic wing.

Meter type: GL and UG by APATOR METRIX

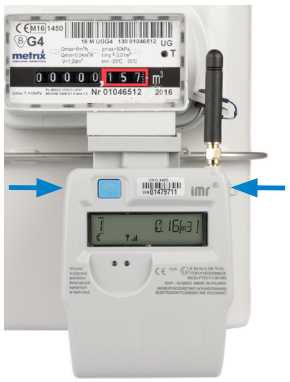
1 Fix the IC M015 adapter on the gas meter.


2 Secure the adapter with a blue seal.



3 Fix OKO to the adapter.

4 Screw and seal OKO with two grey IMR seals on both sides of the cover.



5 Secure the whole set with a plastic meter seal.

Install the seal by threading the wire in the following order: blue seal (1), sealing handle of the ad pter (2), sealing handle of the OKO (3), and again, sealing handle of the adapter (4)(optional). Then thread the wire through the seal cylinder (5). Tighten the seal by rotating the plastic wing clockwise. Firmly hold plastic body in one hand and apply lateral force to break off the plastic wing.

Meter type: RF1 by ITRON

1 Thread the wire through the two holes located below the meter counter.

2 Fix the IC R015 adapter on the gas meter.

3 Screw and seal the adapter with the grey IMR seal.

4 Fix OKO to the adapter. Then, screw and seal OKO with two grey IMR seals on both sides of the cover.

5 Secure the whole set with a plastic meter seal.

Install the seal by threading the wire in the following order: two holes below the meter counter (1) as described in step no.1, sealing handle of the OKO (2), sealing handle of the adapter (3). Then thread the wire through the seal cylinder (4). Tighten the seal by rotating the plastic wing clockwise. Firmly hold plastic body in one hand and apply lateral force to break off the plastic wing.

Gas meters embedded with pulse output

1 Connect the wires to the IC U015 adapter as indicated on its casing and on the cable. Set the cable in the groove and tighten it with to plastic ties.

2 Fix OKO to the adapter. Then, screw and seal OKO with two grey IMR seals on both sides of the cover.

3 Secure the whole set with a plastic meter seal.

Install the seal by threading the wire in the following order: sealing handle of the adapter, sealing handle of the OKO. Then thread the wire through the seal cylinder. Tighten the seal by rotating the plastic wing clockwise. Firmly hold plastic body in one hand and apply lateral force to break off the plastic wing.

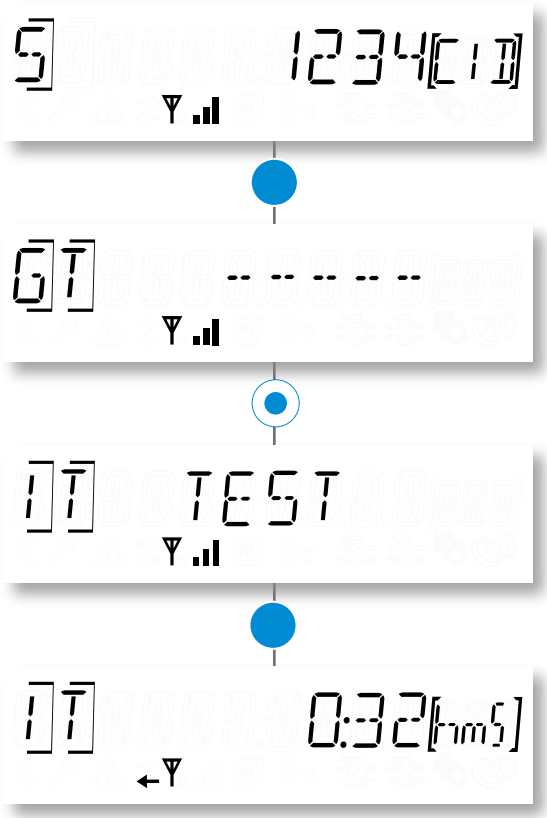
ASSEMBLY METHODS

Wall mounting with screws (1).

Wall mounting with double sided tape (2).

Pipe mounting with dedicated handles and plastic ties(3).

11. IMR TEST



Long press the button in the 5th screen of the Main Menu.

Now, short press the button to enter IMR Test screen.

Long press the button to start the test.

IMR test is in progress. The time left is displayed on the screen.

IMR Test is a special function that enables to check whether the communication with IMR Server is appropriate. The two-way communication is established – the device sends the data to IMR Server, the Server confirms and, finally, the device displays the information about the status of the communication.

Before the test please make sure that:

- OKO X305 is registered in GSM network with accurate GSM signal (at least 1 signal bar)
- The Server is active
- The phone number of GSM modem or SMSC is working

Click or scan to see the tutorial video
vimeo.com/249670307/deecd2de9e

POSSIBLE TEST RESULTS

SUCCESS – communication verified successfully

ERROR – if the test is finished with error, its code is displayed on the screen (time-out, no communication etc.) Make sure that SIM card is properly installed, check the code of the error and contact the service.

ERROR CODES

ERR 02	No SIM card	ERR 09	Allowed number of SMS exceeded
ERR 03	SIM card error	ERR 10	GPRS activation failed
ERR 04	PIN code error	ERR 11	Connection with server failed
ERR 05	PUK code required	ERR 12	Data packet has not been sent
ERR 06	PIN2 code error	ERR 13	Power failure
ERR 07	PUK2 code required	ERR 32	Timeout exceeded
ERR 08	Access to GSM network denied		

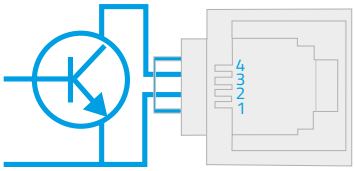
12. REPLICATED PULSE MEASUREMENT

Thanks to the replicated pulse output, OKO X3 can be connected to 3rd party data acquisition system. The output is located in a dedicated IMR adapter and can provide meter pulse output connections to other meter pulse utilization devices, without interfering or disrupting the collection of data and having minimal effect on any power source within the AMR device.

1 Prepare the cable and crimp the RJ11 connector to the cable using crimping tool. The wires should be inserted into the connector according to the diagram below.

1 Short-circuited with wire no. 4*
2 Ground
3 Impulse output
4 Short-circuited with wire no.1*

*Pins internally connected in the socket



2 Plug the connector into the socket in the adapter as shown in the picture.

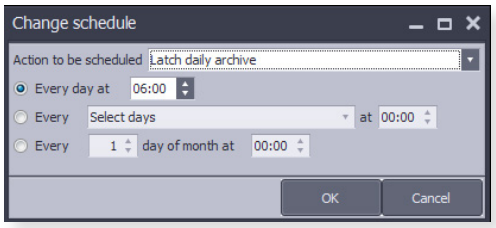
13. DEVICE COMMISSIONING WITH SITA APPLICATION

After the mechanical installation of OKO X305, an action registering the device in particular location must be performed. The operation is performed with SITA - an application dedicated for mobile devices (smartphone, tablet) with android OS that supports the operational procedures such as installation/uninstallation and configuration of IoT devices, as well as diagnostics, operations and services (e.g. battery replacement).

For more details please refer to: SITA. User Guide.

14. DATA STRUCTURES

SCHEDULES One of the most important OKO functionalities is a universal schedule mechanism. In every schedule it is possible to configure a command that is to be executed in appropriate time. It is possible to configure up to 14 (indexed from 0 to13) simultaneously operating schedules. Every schedule enables to start the preconfigured command in OKO on specified date and time and with determined frequency (once or periodically). Configured schedules can be enabled or disabled according to client's needs. Schedules can be configured with SGM Management Console or SIMAX application. With these applications you can select the type of command you want to execute, its time and frequency. The table below presents the exemplary setting of schedules. Refer to Scope of Data to see the exemplary content of the data packet delivered within the particular schedule.

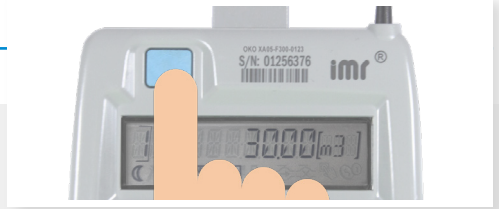


The operation of schedule setting in SGM Management Console application

Name	Function	Time	Frequency	Status
Schedule 0	Daily readouts packet	06:00	Daily	Enabled
Schedule 1	Diagnostic data	First day of the month at 06:00	Monthly	Enables
Schedule 2	Log in to the GSM network	12:00	Daily	Disabled
Schedule 3	Not used			
....				
Schedule 13	Not used			

ON DEMAND

It is possible to send a packet with daily readouts on request. You can do it manually by pressing the button twice in the first or second screen of the Main Menu.



Enter the 1st or 2nd screen of the Main Menu and long press the button.

The moon icon is off. GSM modem is activated.
Again, long press the button.

Bottom arrow is blinking. Data packet is being sent to the server.
Once the action is over, the arrow is off.

Aditionally, OKO X305 is equipped with opto port or Bluetooth Low Energy module (v. OKO X305-x5x3) for local communication with the device.

For detail refer to :

- Local Data Access - BLE module
- Local Data Access - Opto module

NOTIFICATIONS When the specific condition is met (e.g. unauthorized opening of the cover, max. temperature exceeded), the immediate communication with Server can be performed. These notifications can be interpreted as alarms and processed respectively to inform the responsible personnel with SMS or email. Additionally, by default all notification concerning the notifications and device status are sent periodically according to the schedule.

15. SCOPE OF DATA

The content of data packet sent by OKO X305 depends on configuration, while the frequency of data transfer is set in schedules. The exemplary information contained in the data packet sent by OKO is listed below.

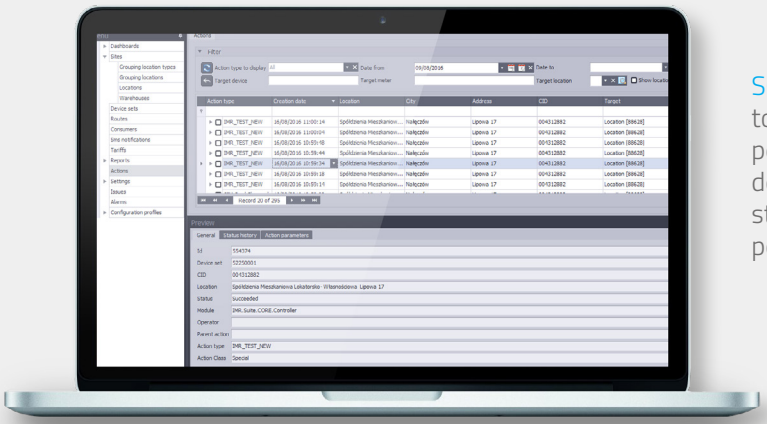
Daily readouts packet	
Meter index	Total gas volume value including counted impulses and synchronization offset
Units	Unit of gas meter index and the increment
Calorific value	The calorific value of the gas indicating the amount of consumed energy based on used gas volume in Wh/m^3
Last registration time in counter archive	-
Last latched meter index value	Last latched value in counter archive
Last latched energy	Last latched energy in counter archive
Meter index registration period	The time of meter index registration in counter archive [in minutes]
Temperature	Ambient temperature given in Celsius degrees
Hourly gas consumption	Meter counter difference calculated as difference between current meter counter and meter counter saved one hour ago.
GSM quality	GSM signal strength
SMS sent	Number of all SMS sent from OKO
SMS received	Number of all SMS delivered to OKO
Firmware version	Signature of OKO firmware version
Battery status	Battery level in percentages (new battery - 100%)
Device status	Flags for current errors
• SIM card error	SIM card not inserted or failed
• cover opened	The cover of the device has been opened
• sabotage	Magnet tamper detection
• device removed	Device has been removed from the meter
• low battery level	-
• max/min temperature exceeded	Current temperature exceeded the allowed range
• max flow exceeded	Max flow value exceeded
• modem error	E.g. no power supply, low temperature or modem error
Device clock	Current date and time (in UTC)

Monthly diagnostic data	
Minimum temperature	Minimum temperature on the current day
Maximum temperature	Maximum temperature on the current day
Average temperature	Average temperature on the current day
Device operation time	Internal clock. Counts seconds since the first start of the device
Modem operation time	-
Modem operator change count	Number of operator changes during modem activation. Many operator changes may indicate low signal quality
Modem last wake up time	Total duration of modem work during the last activation
Modem last logging time	Total time necessary to log in to the network
OPTO operation time	Total operating time of the opto module
Extreme temperature device operation time	Time period when the allowed temperature for the device was exceeded
Extreme temperature modem operation time	Time period when the allowed temperature for the modem was exceeded
Device resets	Number of fault resets
Modem access technology	Current access technology of the modem

16. DATA ACCESS & CONFIGURATION

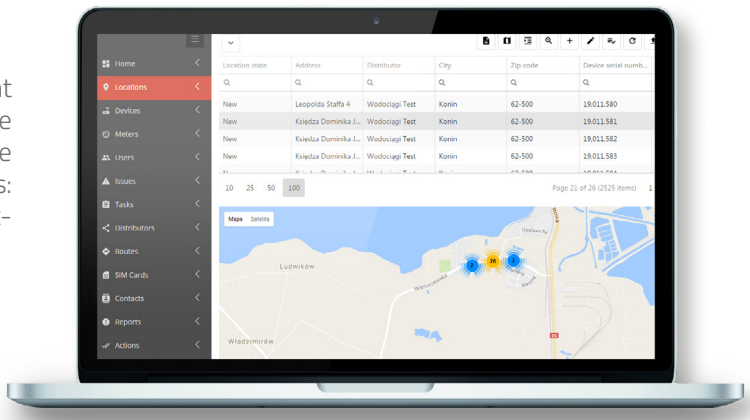
Data received from OKO X3 can be acquired by IMR Server - a high performance, multiprotocol data collection system that enables data presentation on the web application, supervise on-site installations, device handling and daily system maintenance.

SITA is an application dedicated for mobile devices (smart phone, tablet) with Android and iOS that supports on-site procedures such as installation and configuration of IMR data loggers. The communication between SITA and OKO X305 can be performed using OPTO head attached to the opto port of the data logger or directly with BLE module embedded in OKO X305.



SGM Management Console - is a powerful management tool enabling the user to control the gas consumption, perform billing services and manage the locations and devices. The application helps to perform every action step by step and tackle the problem in a relatively short period of time.

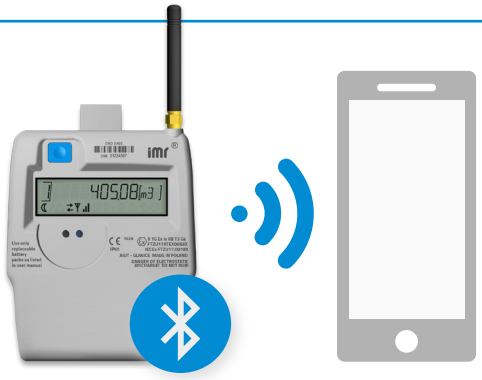
SIMAX is a web portal designed to visualize the measurement data stored in IMR Server. The application enables to organize the data in the context of selected distributor and gives the user access to a wide variety of management tools such as: management of locations and assigned devices or on-line access to database.



17. LOCAL DATA ACCESS - BLE module

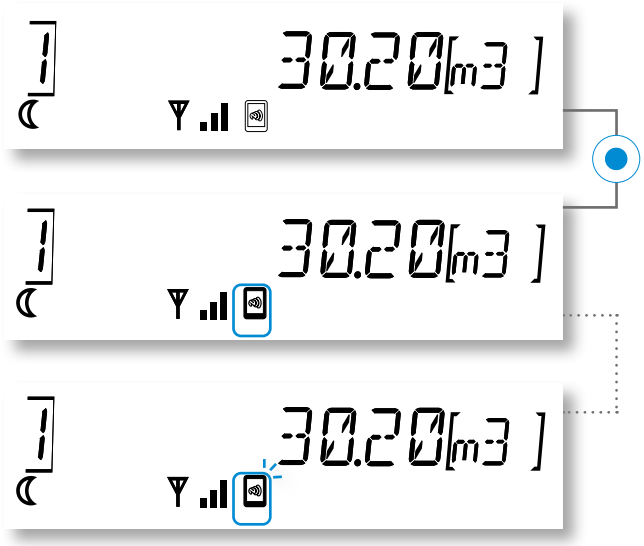
OKO X305-x5x3 is featured with BLE (Bluetooth Low Energy) module that enables to:

- Upgrade firmware
- Get access to device configuration, data, archives etc.
- Run actions on devices (e.g. installation procedure)



NOTE BLE functionality does not prevent using the available opto port for the above-mentioned operations.

Activating BLE module



Short press the button in any screen of Main Menu.

BLE module is advertising - indicated icon is solid.
Start the communication within 120s. Open SITA application and select OKO data logger from the list of available Bluetooth devices.

BLE communication between OKO data logger and mobile device with installed SITA application has been **established properly** - **indicated icon is blinking.** Now you can read/write the configurable parameters in SITA application.

Possible statuses of BLE module

Icon off – BLE module switched off, waiting for the user to wake it up.

Icon solid – BLE module advertising, waiting for communication with SITA.

Icon blinking – BLE module connected with SITA.

18. LOCAL DATA ACCESS - Opto module

OKO X305 is featured with Opto Port that enables to:

- Upgrade firmware
- Get access to device configuration, data, archives etc.
- Run actions on devices (e.g. installation procedure)

Possible statuses of opto module

Off – Opto interface switched off, waiting for the user to wake it up

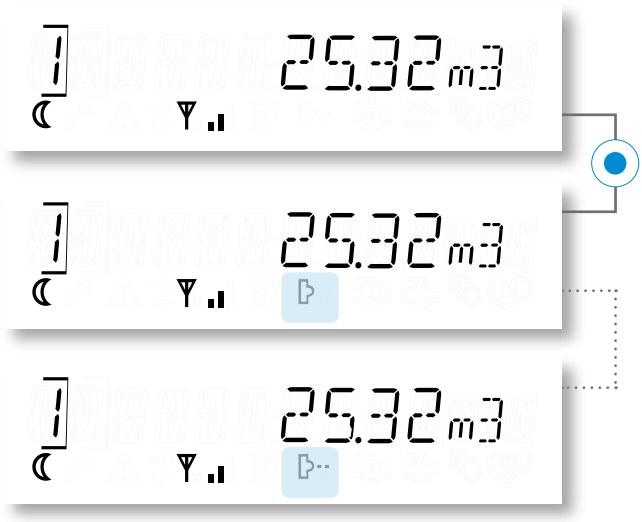
Waiting for data – after attaching Opto Head. Opto interface waits for incoming data

Active– after receiving at least one correct data package

Error- no data received

Activating opto module

Before the opto head is attached to OKO X305, it must be activated - slide a small magnet near the place indicated on the casing of the opto. Blue LED starts blinking - Opto Head is waiting for Bluetooth communication.



Short press the button in any screen of Main Menu.

Opto module is waiting for data, start the communication within 30 sec.

Attach the Opto Head to the opto port of OKO X305.
Open the dedicated application for local communication and configuration (SITA) and read/write the configurable parameters.

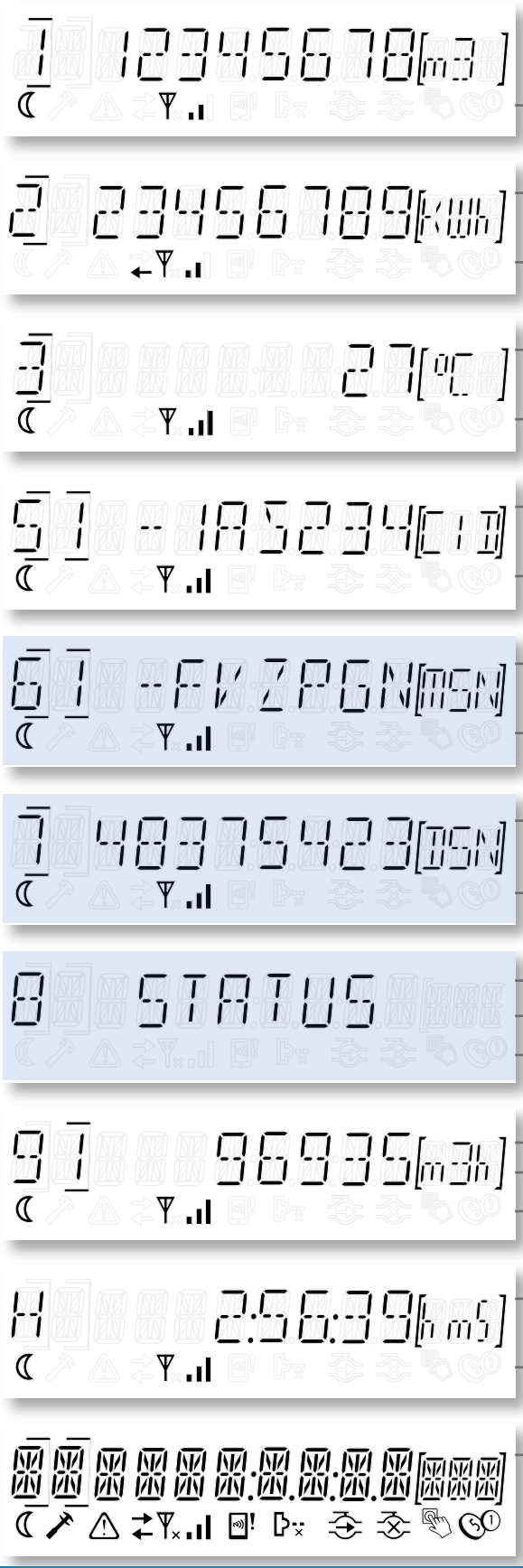
NOTE In case of local communication with OKO X305 installed in potentially explosive areas, it is possible to use only the equipment (Opto Head, computer) certified for use in hazardous areas. Otherwise the readout/configuration must be carried out beyond the area.

Blue LED - Bluetooth communication

Smooth pulsing - waiting for BT communication
Solid blue - active BT connection
Blinking - data transfer in progress

19. LOCAL DATA ACCESS - HMI

Repeatedly short press the button to navigate between the particular screens of the Main Menu. Screens marked with blue are available once the **Service Menu is activated**.



Meter index

Energy index

Temperature

CID - customer ID

Serial number of a gas meter

Serial number of OKO X305

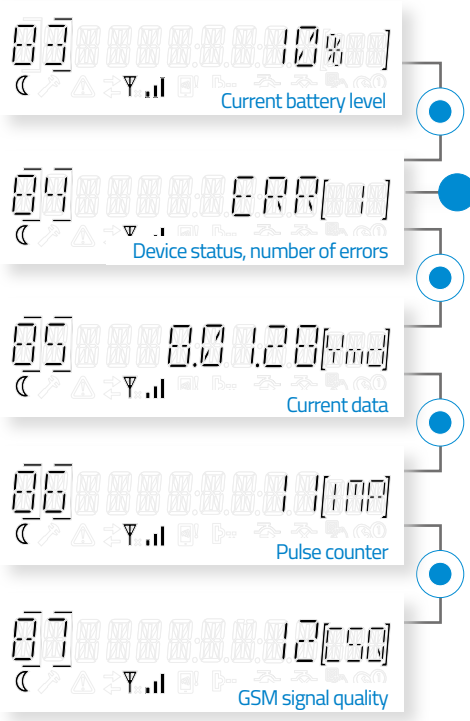
Entering Status/Service Mode
see p.19

Entering Energy Consumption display
see p.19

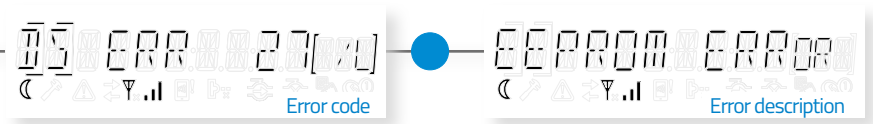
Device (OKO) time

Test screen

20. STATUS MENU/SERVICE MODE



In the 8th screen of the Main Menu long press the button to enter the Status/ Service Mode. Then repeatedly short press the button to navigate between the available screens.

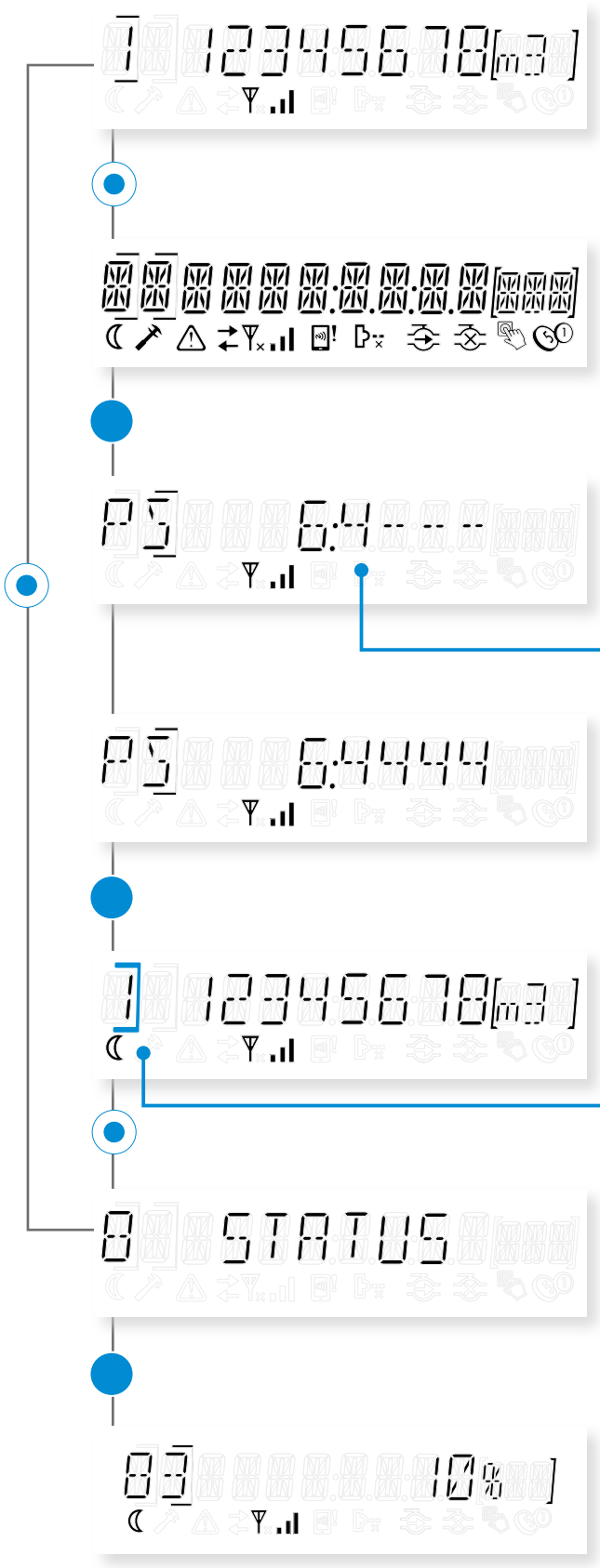


0-6	no signal	13-20	good (SMS/GPRS communication)
7-12	poor (only SMS)	21-32	excellent (SMS/GPRS communication)

21. ENERGY CONSUMPTION DISPLAY

Energy Consumption display is available in the 9th screen of the Main Menu. The value of the highest gas usage in selected time period (current month, previous month, two or three months ago) together with the data and hour of its occurrence is displayed automatically. Short press the button to navigate between the data from determined time periods.

22. ACTIVATING SERVICE MENU



Repeatedly short press the button in the Main Menu to enter the test screen.

In the Test screen long press the button.

Introduce the received PIN code.

Enter the first digit by short pressing the button.
Long press the button to confirm the digit and move on to the next one.

In the same way introduce the other digits.

After introducing the PIN code, long press the button to enter the first screen of the Main Menu.

Access to Service Menu is active for 2 minutes and can be prolonged for another 2 minutes by long pressing the button.

Activated Service Mode is indicated by a blinking group separator

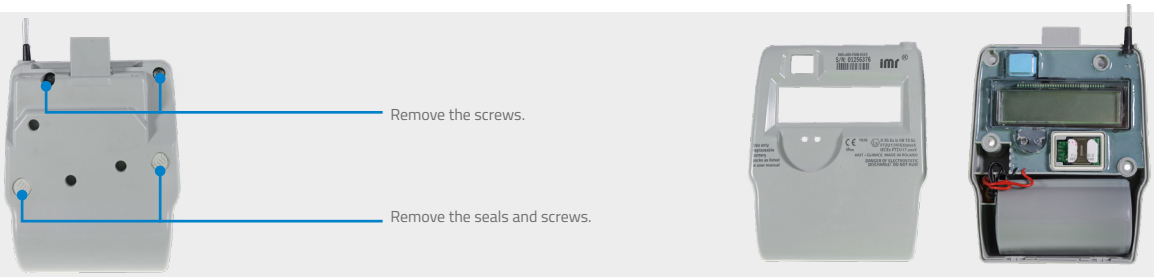
Repeatedly short press the button to enter the 8th screen of the Main Menu. Now, long press the button.

You are in **Service Menu.** Short press the button to switch between the available screens of Service Menu.

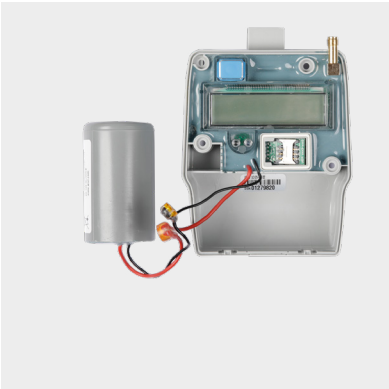
23. BATTERY REPLACEMENT

- The device can be used only with the original battery specified in Technical parameters.
- The procedure of battery replacement in a presence of potentially explosive atmospheres can be performed only by qualified service of the manufacturer.
- The battery wires should be connected with Scotchlok connector, type ZSL-UY2.

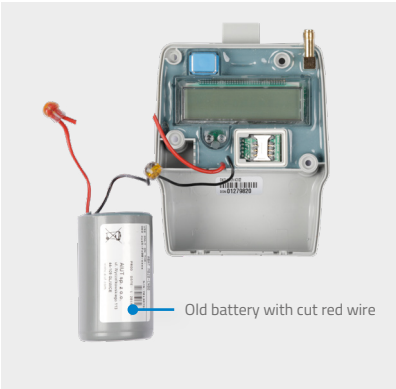
1 Remove the seals and screws from the bottom cover. Gently lift the top cover.



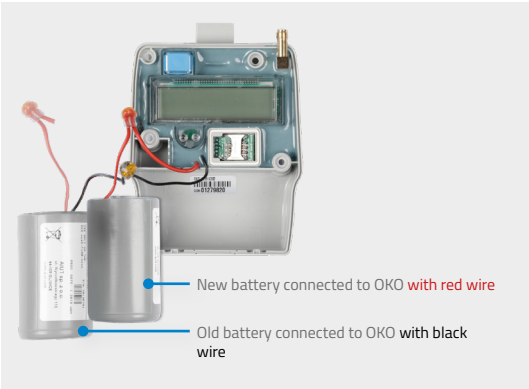
2 Take out the battery pack from the battery compartment.



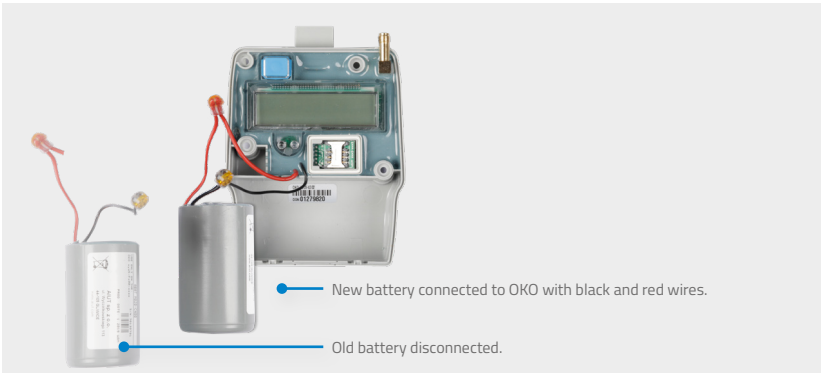
3 Cut one of the wires of the old battery close to the wire connector.



4 Connect the wire of the same colour with a wire connector.



5 Cut the second wire of the old battery and connect the second wire of the same colour with a wire connector.



6 Put the battery back into the body.

7 Close the cover

Gently close both parts of the cover. Fix the cover with four screws and secure it with two plastic seals.

NOTE After exchanging the battery, its status must be set to100%.
It can be done with SITA application.

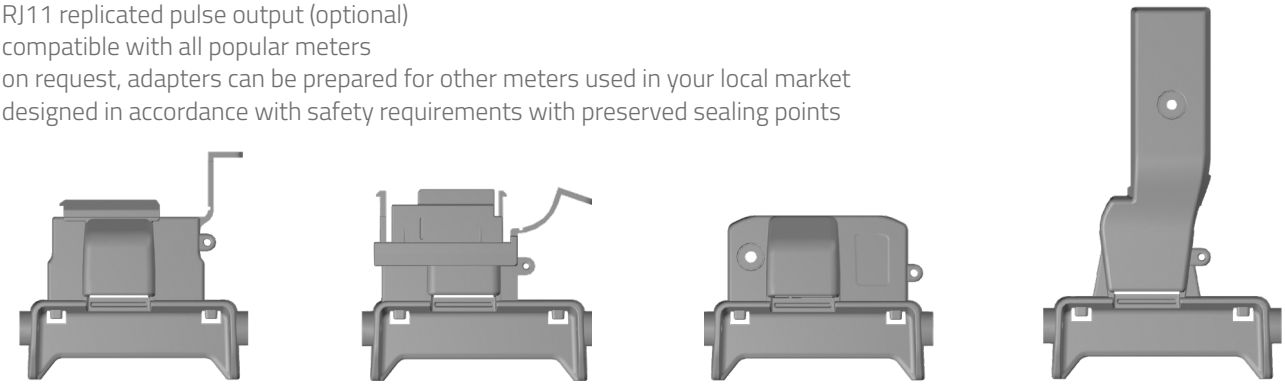
Click or scan to see the tutorial video
vimeo.com/247944285/7546c62e16

24. ACCESSORIES

IMR ADAPTERS

Intrinsically safe devices developed for mechanical installation of diaphragm gas meter data loggers. The family of IMR adapters is designed and dedicated to a wide range of gas meter models of top companies in gas meter market (mostly diaphragm ones).

- ultra-compact, robust design to withstand harsh environments
- RJ11 replicated pulse output (optional)
- compatible with all popular meters
- on request, adapters can be prepared for other meters used in your local market
- designed in accordance with safety requirements with preserved sealing points



OPTO HEAD 02x2

A reliable, user-friendly device allowing proper Bluetooth BLE (Bluetooth Low Energy) communication with IMR devices equipped with opto interface.

The device cooperates with any computer or Android device with installed dedicated application for data readout and configuration. Opto Head 02x2 is a universal, easy to use tool that does not modify transferred data or influence the operation of the device it communicates with.

OPTO HEAD 01x1

Opto Head 01x1 USB is a reliable, user-friendly device allowing proper local communication with IMR devices equipped with optical interface. The Opto Head cooperates with every PC with installed dedicated software allowing configuration and data readout.

It is a flexible and easy to operate tool, that enables communication with devices via USB port. Opto Head does not interfere and alter data from read-outs and does not affect the deviceit communicates with.

TOOLS

- Screwdriver PH size 1
- Philips-head screws, type PH1, size: d x L: 3,1mm x 10mm

SEALS

Plastic blue and grey IMR seals to seal OKO X3 and its dedicated adapter. The number of used seals and their types depends on used gas meter and adapter.

25. CERTIFICATES

ATEX (for OKO X305-F*00)

Physical-Technical Testing Institute
Ostrava - Radvanice

(1) **Supplementary Type Examination Certificate No. 3**

(2) **Equipment or Protective Systems Intended for Use in Potentially Explosive Atmospheres (Directive 2014/34/EU)**

(3) Type Examination Examination Certificate number:

FTZÚ 17 ATEX 0063X

(4) Product: **Gas Meter Data Logger type OKO xyz5-****-****

(5) Manufacturer: **AIUT Sp. z o.o.**

(6) Address: **ul. Wyczółkowskiego 113, 44-109 Gliwice, Poland**

(7) This supplementary certificate extends Type Examination Certificate No. FTZÚ 17 ATEX 0063X to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

(8) The Physical-Technical Testing Institute certifies that this product, as modified by this supplementary certificate, has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive 2014/34/EU of the European Parliament and of the Council, dated 26.02.2014.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018, EN 60079-11:2012

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use specified in the schedule to this certificate.

(11) The marking of the product shall include the following:

Ex II 3G Ex ic IIB T3 Gc

(12) This certificate is valid till: **31.03.2026**

Responsible person:
Dipl. Ing. Lukáš Martinák
Head of Certification Body

Date of issue: 12.03.2021

Physical-Technical Testing Institute
Ostrava - Radvanice

(13) **Schedule**

(14) **Supplementary Type Examination Certificate No. 3 to FTZÚ 17 ATEX 0063X**

(15) Description of the variation to the Product:

The subject of this supplementary certificate is:

- Modification of certified apparatus
- Evaluation according to newest standards;
- Prolongation of certificate validity;
- Removing the products with ia protection: OKO xyz5-8***, OKO xyz5-9***.

The supplement to the certificate describes these modifications:

- Actualization of documentation.
- Added new version of main board and new type of GSM/LTE modems.
- Added new version of the board containing a Bluetooth module.
- Added new battery packs with electronic protection.

These changes do not affect the current level of protection, technical and mechanical parameters.

Description of the product:

OKO xyz5 Gas Meter Data Logger is an intrinsically safe device that has a safe construction consisting of a plastic enclosure, battery pack and electronics. The device is equipped with a digital display, LED optical communication, control button and GSM antenna. The connector for replaceable or fixed adapters developed for communication with gas meters is placed in the top wall of the cover. The data are transferred via cellular network or/and Bluetooth interface. Optical interface serves as a local configuration and diagnostic interface.

Depending on the version, the device can be delivered with digital inputs. The device is powered by ABAT...

Responsible person:
Dipl. Ing. Lukáš Martinák
Head of Certification Body

Date of issue: 12.03.2021

Physical-Technical Testing Institute
Ostrava - Radvanice

(13) **Schedule**

(14) **Supplementary Type Examination Certificate No. 3 to FTZÚ 17 ATEX 0063X**

The product is now made according to the following table:

Version of product OKO	x	y	z	5	-	x	x	x	x	-	x	x	x	x
Position	1	2	3	4		5	6	7	8		9	10	11	12

Position	Description
1	Device type
	X – universal module without adapter
2	Cellular network communication technology
	3 –modem (GSM/GPRS) 4 –modem (LTE) A – modem NB IoT
3	Presence and frequency of SRD module
	0 – without radio interface
5	Power supply method
	E – battery packet with batteries with size near to A, F – battery packet with battery with size D.
6	Hardware versions
	3 – input connector for the adapter containing the interface with the gas meter counter (PULLUP) 5 – Bluetooth module input connector for the adapter containing the interface with the meter counter (PULLUP)
7	Type of SIM card
	0 – external on slot 1 – internal, SIM on Chip 2 – Dual SIM, external + internal
8	3 – main board code
9	Hardware modifications
	0 – no modification (rod antenna) 1 – SMA connector for external cellular network antenna
10, 11, 12	Firmware version (optional)

Responsible person:
Dipl. Ing. Lukáš Martinák
Head of Certification Body

Date of issue: 12.03.2021

Physical-Technical Testing Institute
Ostrava - Radvanice

(13) **Schedule**

(14) **Supplementary Type Examination Certificate No. 3 to FTZÚ 17 ATEX 0063X**

Intrinsically safe parameters:

Adapter connectors:
Uo = 5.4 V; Io = 23 mA; Po = 30 mW; Co = 100 µF; Lo = 1 mH
Ui = 5.4 V; Ii = 0.2 A; Pi = 1 W; Li, Ci – negligible values

SMA antenna connector:
Uo = 10 VAC; Io = 0.2 A; Po = 2 W; Co = 1 µF; Lo = 1 µH

Ambient temperature: -40°C ≤ Ta ≤ +70°C

(16) Report Number: 17/0063/3

(17) Specific Conditions of Use:

1. Under certain extreme circumstances, the plastic enclosure may store an ignition-capable level of electrostatic charge. The device shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge. The equipment shall only be cleaned with a damp cloth.

(18) Essential Health and Safety Requirements:

Compliance with the Essential Health and Safety Requirements is covered by standards mentioned in clause (10) of this supplementary certificate.

(19) Drawings and Documents:

Document / Drawing:	*Version:*	*Date:*	*Nr. of pages:*
Ex documentation OKO xyz5 Update 4	1.0	10.11.2020	15
User manual OKO xyz5 minimal content UPD4	1.0	10.11.2020	9
Printed circuit boards	1.0	10.11.2020	10
Schemes	1.0	10.11.2020	4
Lists of components	1.0	10.11.2020	12

Responsible person:
Dipl. Ing. Lukáš Martinák
Head of Certification Body

Date of issue: 12.03.2021

ATEX (for OKO X305-9*00)

Physical-Technical Testing Institute
Ostrava - Radvanice

EU - Type Examination Certificate

(1)

(2) **Equipment or Protective Systems Intended for Use in Potentially Explosive Atmospheres (Directive 2014/34/EU)**

(3) EU - Type Examination Certificate number:

FTZÚ 21 ATEX 0022X

(4) Product: **Gas Meter Data Logger type OKO xyz5-****-****

(5) Manufacturer: **AIUT, Sp. z o.o.**

(6) Address: **ul. Wyczółkowskiego 113, 44-109 Gliwice, Poland**

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physical-Technical Testing Institute, Notified Body number 1026, in accordance with Articles 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26.02.2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report number:

21/0022 dated 05.03.2021

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018, EN 60079-11:2012

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use specified in the schedule to this certificate.

(11) This certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

II 1G Ex ia IIB T3 Ga

This certificate is valid till: **31.03.2026**

Responsible person:
Dipl. Ing. Lukáš Martinák
Head of Certification Body

Date of issue: 12.03.2021

Physical-Technical Testing Institute
Ostrava - Radvanice

(13) **Schedule**

(14) **EU - Type Examination Certificate No. FTZÚ 21 ATEX 0022X**

(15) Description of Product:

OKO xyz5 Gas Meter Data Logger is an intrinsically safe device that has a safe construction consisting of a plastic enclosure, battery pack and electronics. The device is equipped with a digital display, LED optical communication, control button and GSM antenna. The connector for replaceable or fixed adapters developed for communication with gas meters is placed in the top wall of the cover. The data are transferred via cellular network or/and Bluetooth interface. Optical interface serves as a local configuration and diagnostic interface.

Depending on the version, the device can be delivered with digital inputs. The device is powered by battery pack ABAT ..

The product is now made according to the following table:

Version of product OKO	x	y	z	5	-	x	x	x	x	-	x	x	x	x
Position	1	2	3	4		5	6	7	8		9	10	11	12

Position	Description
1	Device type
	X – universal module without adapter
2	Cellular network communication technology
	3 – modem (GSM/GPRS) 4 – modem (LTE) A – modem NB IoT
3	Presence and frequency of SRD module
	0 – without radio interface
5	Power supply method
	8 – battery packet with batteries with size near to A 9 – battery packet with battery with size D
6	Hardware versions
	3 – input connector for the adapter containing the interface with the gas meter counter (PULLUP) 5 – Bluetooth module input connector for the adapter containing the interface with the meter counter (PULLUP)
7	Type of SIM card
	0 – external on slot 1 – internal, SIM on Chip 2 – Dual SIM, external + internal

Responsible person:
Dipl. Ing. Lukáš Martinák
Head of Certification Body

Date of issue: 12.03.2021

Physical-Technical Testing Institute
Ostrava - Radvanice

(13) **Schedule**

(14) **EU - Type Examination Certificate No. FTZÚ 21 ATEX 0022X**

Position	Description
8	3 – main board code
9	Hardware modifications
	0 – no modification (rod antenna) 1 – SMA connector for external cellular network antenna
10, 11, 12	Firmware version (optional)

Intrinsically safe parameters:

Adapter connectors:
Uo = 5.4 V; Io = 23 mA; Po = 30 mW; Co = 100 µF; Lo = 1 mH
Ui = 5.4 V; Ii = 0.2 A; Pi = 1 W; Li, Ci – negligible values

SMA antenna connector:
Uo = 10 VAC; Io = 0.2 A; Po = 2 W; Co = 1 µF; Lo = 1 µH

Ambient temperature range: -40°C ≤ Ta ≤ +60°C

(16) Report Number: 21/0022

(17) Specific Conditions of Use:

1. Under certain extreme circumstances, the plastic enclosure may store an ignition-capable level of electrostatic charge. The device shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge. The equipment shall only be cleaned with a damp cloth.

(18) Essential Health and Safety Requirements:

Compliance with the Essential Health and Safety Requirements is covered by standards mentioned in clause (9) of this certificate.

Responsible person:
Dipl. Ing. Lukáš Martinák
Head of Certification Body

Date of issue: 12.03.2021

Physical-Technical Testing Institute
Ostrava - Radvanice

(13) **Schedule**

(14) **EU - Type Examination Certificate No. FTZÚ 21 ATEX 0022X**

(19) List of Documentation:

Document / Drawing:	*Revision:*	*Date:*	*Nr. of pages:*
EU - Type Examination Certificate No: FTZÚ 17 ATEX 0063X	--	22.08.2017	4
Supplementary EU - Type Examination Certificate No. 1 FTZÚ 17 ATEX 0063X	--	15.10.2018	2
Supplementary EU - Type Examination Certificate No. 2 FTZÚ 17 ATEX 0063X	--	15.10.2018	2
Ex Documentation OKO xyz5 UPD4	1.0	10.11.2020	15
User manual OKO xyz5 UPD4	1.0	10.11.2020	9
Schematics UPD4	1.0	10.11.2020	10
Printed boards UPD4	1.0	10.11.2020	4
Components lists UPD4	1.0	10.11.2020	12

Responsible person:
Dipl. Ing. Lukáš Martinák
Head of Certification Body

Date of issue: 12.03.2021

IECEx

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx FTZU 17.0018X**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 2	Issue 1 (2019-12-19) Issue 0 (2017-08-22)
Date of Issue:	2021-03-12		
Applicant:	**AIUT, Sp. z o.o.** ul. Wyczółkowskiego 113, 44-109 Gliwice **Poland**		
Equipment:	**Gas Meter Data Logger type OKO xyz5-****-****		
Optional accessory:			
Type of Protection:	**Intrinsic safety**		
Marking:	Ex ia IIB T3 Ga version OKO xyz5-8***-****, OKO xyz5-9***-**** Ex ic IIB T3 Gc version OKO xyz5-E***-****, OKO xyz5-F***-****		

Approved for issue on behalf of the IECEx Certification Body: **Dipl. Ing. Lukáš Martinák**

Position: **Head of the Certification Body**

Signature: (for printed version)

Date: 2021-03-12

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

Fyzikalne technicky zkusebni ustav
(Physical -Technical Testing Institute)
Pikartska 7, 71607 Ostrava - Radvanice
Czech Republic

UK Ex (for OKO X305-9*00)

ExVeritas

1 **UNITED KINGDOM CONFORMITY ASSESSMENT**
UK TYPE EXAMINATION CERTIFICATE

2 **Product Intended for use in Potentially Explosive Atmospheres**
UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1

3 Certificate Number: **ExVeritas 23UKEX1503X** Issue: **0**

4 Product: OKO xyz5-****-**** Gas meter data logger

5 Manufacturer: AIUT Sp. z o.o.

6 Address: Wyczółkowskiego 113, 44-109 Gliwice, Poland

7 This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 ExVeritas Limited Approved Body number 2585, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended by UKSI 2019:696), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

9 Compliance with the applicable Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 EN 60079-11:2012

Except in respect of those requirements listed at section 16 of the schedule to this certificate.

10 If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the equipment shall include the following:

Ex II 1G Ex ia IIB T3 Ga

UKAS PRODUCT CERTIFICATION
No. 8613

On behalf of ExVeritas
S Clarke CEng MSc FIET
Managing Director

ExVeritas

Schedule

13 Description of Product

OKO xyz5-****-**** Gas Meter Data Logger is an intrinsically safe device that has a safe construction consisting of a plastic enclosure, battery pack and electronics. The device is equipped with a digital display, LED optical communication, control button and GSM antenna. The connector for replaceable or fixed adapters developed for communication with gas meters is placed in the top wall of the cover. The data are transferred via cellular network or/and Bluetooth interface. Optical interface serves as a local configuration and diagnostic interface. Depending on the version, the device can be delivered with digital inputs. The device is powered by ABAT battery pack.

Intrinsically safe parameters for adapter connectors:
Uo = 5.4 V; Io = 23 mA; Po = 30 mW; Co = 100 µF; Lo = 1 mH
Ui = 5.4 V; Ii = 0.2 A; Pi = 1 W; Li, Ci – negligible

Intrinsically safe parameters for SMA antenna connector:
Uo = 10 VAC; Io = 0.2 A; Po = 2 W; Co = 1 µF; Lo = 1 µH

The part number disambiguation:

Version of product OKO	x	y	z	5	-	x	x	x	x	-	x	x	x	x
Position	1	2	3	4		5	6	7	8		9	10	11	12

Position	Description
1	Device type: X – universal module without adapter
2	Communication technology 3 - 2G 4 - 4G A - NB IoT
3	Presence and frequency of SRD module: 0 – no SRD module
5	Battery packet, zone: 8 – A cell battery pack, designed for zone 0 9 - D cell battery pack, designed for zone 0
6	Hardware versions: 3 - connector dedicated for adapters with built-in pulse sensor coupled with gas meter counter (PULLUP) 5 – Bluetooth module + connector dedicated for adapters with built-in pulse sensor coupled with gas meter counter (PULLUP)
7	Type of SIM card: 0 – external, on slot 3 – internal, SIM on Chip 5 – dual SIM: external+internal
8	3 – main board code
9	Additional hardware versions: 0 – no modifications (whip antenna) 1 – SMA connector for external mobile antenna
10,11,12	Optional number of firmware version

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Schedule

14 Descriptive Documents

14.1 Associated Report and Certificate History:

Report Number	Cert Issue Date	Issue	Comment
R3536/A2	11/01/2023	0	Initial issue of the Prime Certificate

14.2 Compliance Drawings:

Title	Document	Revision	Date
Ex documentation addendum	DOC01	1.0	04/11/2022
Ex User manual OKO xyz5 – minimum content UK	DOC02	1.0	10/11/2022
Ex documentation OKO xyz5	03-164.09.03	1.0	13/04/2017
Ex User manual – minimum content	03-164.09.03	1.0	13/04/2017
Subassembly ABAT M020-1455-CN00	03-164.09.03	1.0	13/04/2017
Subassembly ABAT M020-CN00	03-164.09.01	1.1	13/04/2017
Subassembly IC E115 extension.	03-164.09.01	1.0	13/04/2017
Subassembly PCB OKO xxx5-xxx0	03-164.09.03	1.0	13/04/2017
Subassembly PCB PULSE xxx5-1xx0	03-164.09.03	1.0	13/04/2017
Subassembly PCB uSIM xxx3-xxx3	03-164.09.01	1.2	13/04/2017
Update 2 to Ex documentation OKO xyz5	03-164.09.03	UPD2	01/10/2018
Ex documentation OKO xyz5 Update 3	DOC01	1.0	21/06/2019
Ex User manual – minimum content	03-164.09.03	1.0	21/06/2019
OKO xyz5 Schematics	DRW01	1.0	21/06/2019
OKO xyz5 Printed Boards	DRW02	1.0	21/06/2019
OKO xyz5 Components lists	LST01	1.0	21/06/2019
Ex documentation OKO xyz5 Update 4	DOC01	1.0	10/11/2020
User manual OKO xyz5	03-164.09.03	1.0	10/11/2020
OKO xyz5 Schematics	DRW01	1.0	10/11/2020
OKO xyz5 Printed Boards	DRW02	1.0	10/11/2020
OKO xyz5 Components lists	LST01	1.0	10/11/2020

15 Conditions of certification

15.1 Special Conditions for Safe Use

1. Ambient temperature range: -40°C < Tamb < +60°C
2. Under certain extreme circumstances, the plastic enclosure may store an ignition-capable level of electrostatic charge. The device shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge. The equipment shall only be cleaned with a damp cloth.

15.2 Routine tests

None

16 Essential Health and Safety Requirements (Regulations Schedule 1)

Essential Health and Safety Requirements are addressed by the standards listed in section 9 and where required the report listed in section 14.1

The manufacturer shall inform ExVeritas of any modifications to the design of the product described by this schedule.

UK Ex (for OKO X305-F*00)

ExVeritas®

1 United Kingdom 'Ex' Conformity Assessment

2 **Product Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended by UKSI 2019:696)**

3 Certificate Number: **ExVeritas 23UKEX1504X** Issue: **0**

4 Product: OKO xyz5-****-**** Gas meter data logger

5 Manufacturer: AIUT Sp. z o.o.

6 Address: Wyczółkowskiego 113, 44-109 Gliwice, Poland

7 This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to. The assessments are recorded in ExVeritas project file number EXV003536A.

8 The product has been assessed against the following Standards and found to comply:

EN IEC 60079-0: 2018 EN 60079-11:2012

9 If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

10 ExVeritas takes no responsibility for the validity of any information or data supplied by the manufacturer on which parts of the assessment may be based upon.

11 The marking of the equipment shall include the following:

Ex II 3G Ex ic IIB T3 Gc

UKAS PRODUCT CERTIFICATION
No. 8613

On behalf of ExVeritas

S Clarke CEng MSc FIET
Managing Director

ExVeritas®

Schedule

12 Description of Product

OKO xyz5-****-**** Gas Meter Data Logger is an intrinsically safe device that has a safe construction consisting of a plastic enclosure, battery pack and electronics. The device is equipped with a digital display, LED optical communication, control button and GSM antenna. The connector for replaceable or fixed adapters developed for communication with gas meters is placed in the top wall of the cover. The data are transferred via cellular network or/and Bluetooth interface. Optical interface serves as a local configuration and diagnostic interface. Depending on the version, the device can be delivered with digital inputs. The device is powered by ABAT battery pack.

Intrinsically safe parameters for adapter connectors:
Uo = 5.4 V; Io = 23 mA; Po = 30 mW; Co = 100 µF; Lo = 1 mH
Ui = 5.4 V; Ii = 0.2 A; Pi = 1 W; Li, Ci – negligible

Intrinsically safe parameters for SMA antenna connector:
Uo = 10 VAC; Io = 0.2 A; Po = 2 W; Co = 1 µF; Lo = 1 µH

The part number disambiguation:

Version of product OKO	x	y	z	5	-	x	x	x	x	-	x	x	x	x
Position	1	2	3	4		5	6	7	8		9	10	11	12

Position	Description
1	Device type: X – universal module without adapter
2	Communication technology 3 - 2G 4 - 4G A - NB IoT
3	Presence and frequency of SRD module: 0 – no SRD module
5	Battery packet, zone: E - A cell battery pack, designed for zone 2 F - D cell battery pack, designed for zone 2
6	Hardware versions: 3 - connector dedicated for adapters with built-in pulse sensor coupled with gas meter counter (PULLUP) 5 – Bluetooth module + connector dedicated for adapters with built-in pulse sensor coupled with gas meter counter (PULLUP)
7	Type of SIM card: 0 – external, on slot 3 – internal, SIM on Chip 5 – dual SIM: external+internal
8	3 – main board code
9	Additional hardware versions: 0 – no modifications (whip antenna) 1 – SMA connector for external mobile antenna
10,11,12	Optional number of firmware version

13 Descriptive Documents

13.1 Associated Report and Certificate History:

Report Number	Cert Issue Date	Issue	Comment
R3536/A/1	11/01/2023	0	Initial issue of the Prime Certificate

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Schedule

13.2 Compliance Drawings:

Title	Document	Revision	Date
Ex documentation addendum	DOC01	1.0	04/11/2022
Ex User manual OKO xyz5 – minimum content UK	DOC02	1.0	10/11/2022
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Ex User manual – minimum content	03-164.09.03	1.0	13/04/2017
Subassembly ABAT M020-1455-CN00	03-164.09.03	1.0	13/04/2017
Subassembly ABAT M020-CN00	03-164.09.01	1.1	13/04/2017
Subassembly IC E115 extension	03-164.09.01	1.0	13/04/2017
Subassembly PCB OKO xxx5-xxx0	03-164.09.03	1.0	13/04/2017
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Subassembly PCB uSIM xxx3-xxx3	03-164.09.01	1.2	13/04/2017
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OKO xyz5 Schematics	DRW01	1.0	21/06/2019
OKO xyz5 Printed Boards	DRW02	1.0	21/06/2019
OKO xyz5 Components lists	LST01	1.0	21/06/2019
Ex documentation OKO xyz5 Update 4	DOC01	1.0	10/11/2020
User manual OKO xyz5	03-164.09.03	1.0	10/11/2020
OKO xyz5 Schematics	DRW01	1.0	10/11/2020
OKO xyz5 Printed Boards	DRW02	1.0	10/11/2020
OKO xyz5 Components lists	LST01	1.0	10/11/2020

14 Specific conditions of use

14.1 Special conditions for safe use

1. Ambient temperature range: -40°C<Tamb<+70°C
2. Under certain extreme circumstances, the plastic enclosure may store an ignition-capable level of electrostatic charge. The device shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge. The equipment shall only be cleaned with a damp cloth.

14.2 Routine tests

None

15 Essential Health and Safety Requirements

Essential Health and Safety Requirements are addressed by the standards listed in section 8 and where required the report listed in section 13.1. The manufacturer shall inform the ExVeritas of any modifications to the design of the product described by this schedule.

CE/UKCA

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File: DoC_OKO_X305_eng_v8.pdf — Gliwice, November 2023

EU DECLARATION OF CONFORMITY
DECLARATION OF CONFORMITY

CE UKCA

Product

OKO X305 Gas Meter Data Logger

Name and address of the manufacturer	AIUT Sp. z o.o., ul. Wyczółkowskiego 113, 44-109 Gliwice, Poland Tel.: +48 32 775 40 00, Fax: +48 32 775 40 01 e-mail: biuro@aiut.com
This declaration of conformity is issued under the sole responsibility of the manufacturer.	
Object of the declaration	OKO X305 is a universal, intrinsically safe data logger with valve controller that consists of plastic enclosure, battery pack and electronics. OKO X305 installed on gas meter takes pulses from the meter and sends the data (regular archive data and alarms) over GPRS/SMS to IMR Suite Server. The device is powered by dedicated battery pack including single primary lithium cell what ensures 5-10 years lifetime. Built-on LCD delivers information about a current reading and the status of the device. Optical interface serves as a local configuration and diagnostic interface. 
The object of the declaration described above is in conformity with the relevant Union harmonisation legislation and the relevant statutory requirements.	
References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared:	
RED **RER**	**Council Directive: 2014/53/EU** **The Radio Equipment Regulations 2017 - UKSI 2017 No.1206**
Harmonized standards Designated standards	**Art. 3.1a) The protection of the health and the safety of persons** **The protection of the health and the safety of persons**
EN 62368-1:2014	Audio/video, information and communication technology equipment — Part 1: Safety requirements
	Art. 3.1b) EMC **EMC**
ETSI EN 301 489-1 V2.1.1	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU
Draft ETSI EN 301 489-52 V1.1.0	Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 52: Specific conditions for Cellular Communication Mobile and portable (UE) radio and ancillary equipment; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU

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	Art 3.2 Efficient use and support for efficient use of radio spectrum **Efficient use and support for efficient use of radio spectrum**
ETSI EN 301 511 V12.5.1	Global System for Mobile communications (GSM); Mobile Stations (MS) equipment; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU

ATEX	**Council Directive: 2014/34/EU**
Harmonized standards	
EN IEC 60079-0:2018	Explosive atmospheres Part 0: Equipment - General requirements
EN 60079-11:2012	Explosive atmospheres Part 11: Equipment protection by intrinsic safety "i"
The notified body (ATEX)	Physical Technical Testing Institute Ostrava-Radvanice, Czech Republic
body identification number	1026
has performed	conformity assessment procedure according to Module B: EU-Type Examination
and issued the Certificate:	FTZU 17 ATEX 0063X II 3G Ex ic IIB T3 Gc (OKO X305-F***) + supplement No. 1 15.10.2018 + supplement No. 2 19.12.2019 + supplement No. 3 12.03.2021 + supplement No. 4 31.01.2023 FTZU 21 ATEX 0022X II 1G Ex ia IIB T3 Ga (OKO X305-8***, OKO X305-9***) Issue date: 12.03.2021 + supplement No.1 31.01.2023
The notified body (ATEX)	Physical Technical Testing Institute Ostrava-Radvanice, Czech Republic
body identification number	1026
has performed	the manufacturer's quality system assessment procedure according to Module D: Conformity to type based on quality assurance of the production process
and issued the Quality Assurance Notification:	FTZU 04 ATEX Q 008
Product is certified under IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.	
IECEx Certificate No.	IECEx FTZU 17.0018X
UKEX	**The Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016 - UKSI 2016 No.1107 (as amended by UKSI 2019 No.696)**
Designated standards	
EN IEC 60079-0:2018	Explosive atmospheres Part 0: Equipment - General requirements
EN 60079-11:2012	Explosive atmospheres Part 11: Equipment protection by intrinsic safety "i"
The UKCA approved body	Ex Veritas Limited, United Kingdom
body identification number	2585
has performed	conformity assessment procedure according to Part 1 of Schedule 3A – Type Examination
and issued the Certificates:	ExVeritas 23UKEX1503X II 1G Ex ia IIB T3 Ga (OKO X305-8***, OKO X305-9***) ExVeritas 23UKEX1504X II 3G Ex ic IIB T3 Gc (OKO X305-F***)

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The UKCA approved body	Ex Veritas Limited, United Kingdom
body identification number	2585
has performed	the manufacturer's quality system assessment procedure according to Part 2 and Part 5 of Schedule 3A of the Regulations
and issued the UK Quality Assurance Notification:	ExVeritas 23UKQAN0330
Product is certified under IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.	
IECEx Certificate No.	IECEx OBAC 21.0004X
RoHS 2.0 and RoHS 3.0 **RoHS 2012**	**Council Directive: 2011/65/EU and Commission Delegated Directive (EU) 2015/863** **The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 - UKSI 2012 No. 3032**
Harmonized standards Designated standards	
EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Products are developed and manufactured in an ISO 9001:2015, PN-N-18001, EN ISO/IEC 80079-34:2011 certified factory.

Signed for and on behalf of manufacturer:

aiut Sp. z o.o.
44-109 Gliwice, ul. Wyczółkowskiego 113
tel. 32 775 4000; fax: 32 775 4001
NIP 631-020-03-40

Artur Gabryś
Proxy

Prepared by:

Grzegorz Szolc
Certification Engineer

imr Integrated meter reading

IP

J.S. Hamilton Poland S.A.
(do dnia 30.04.2018r. JOAiCW TEST Sp. z o.o.)
Jednostka Certyfikująca
ul. Wyzwolenia 14
41-103 Siemianowice Śląskie

(1) **CERTIFICATE**
OF ENCLOSURE PROTECTION DEGREE
No. JSHP/037/IP/2018

(2) Manufacturer: **AIUT Sp. z o.o.**

(3) Address: **Wyczółkowskiego 113, 44-100 Gliwice**

(4) Device: **OKO X305 Gas Meter Data Logger**

(5) Tested degree of enclosure protection: **IP67**

(6) J.S. Hamilton Poland S.A. – Certification Body based in Siemianowice Śląskie (J.S. Hamilton Poland S.A. – Jednostka Certyfikująca z siedzibą w Siemianowicach Śląskich) on the basis of tests carried out according to standard PN-EN 60529:2003 and PN-EN 60529:2003/A2:2014, certifies that the enclosure of the device listed in paragraph **(4)** ensures a degree of protection listed in paragraph **(5)**.

(7) The certificate was issued on the basis of a test report prepared by J.S. Hamilton Poland S.A. – Testing Laboratory based in Siemianowice Śląskie (J.S. Hamilton Poland S.A. – Laboratorium Badawcze z siedzibą w Siemianowicach Śląskich) (Accreditation No. **AB 1552**) **No. LT/322/2018**.

(8) Date of the certificate issue: **08.10.2018**

Romuald Matlachowski
Z-ca Kierownika Jednostki Certyfikującej

Siemianowice Śl., 08.10.2018

J.S. Hamilton Poland S.A., ul. Chwaszczyńska 180, 81-571 Gdynia
Jednostka Certyfikująca, ul. Wyzwolenia 14, 41-103 Siemianowice Śląskie
Tel./Fax. +48 32 730 82 00, www.hamilton.com.pl, www.joac-test.pl