



1. CONDITIONS OF USE

- Operating temperature: -40°C to +55°C
- IP 65
- Never rub the enclosure surface of APULSE X3x5 using a dry cloth because of the danger of electrostatic discharge
- Accessories – the mounting of the product should follow the manufacturer’s instructions and should use mounting accessory recommended by the manufacturer
- Warranty – failure to follow the instruction or any modifications/alternations in the operations described in this instruction may void the warranty
- Transport – every item removed from the multi-pack must be properly secured (e.g. with bubble wrap) for further transport.

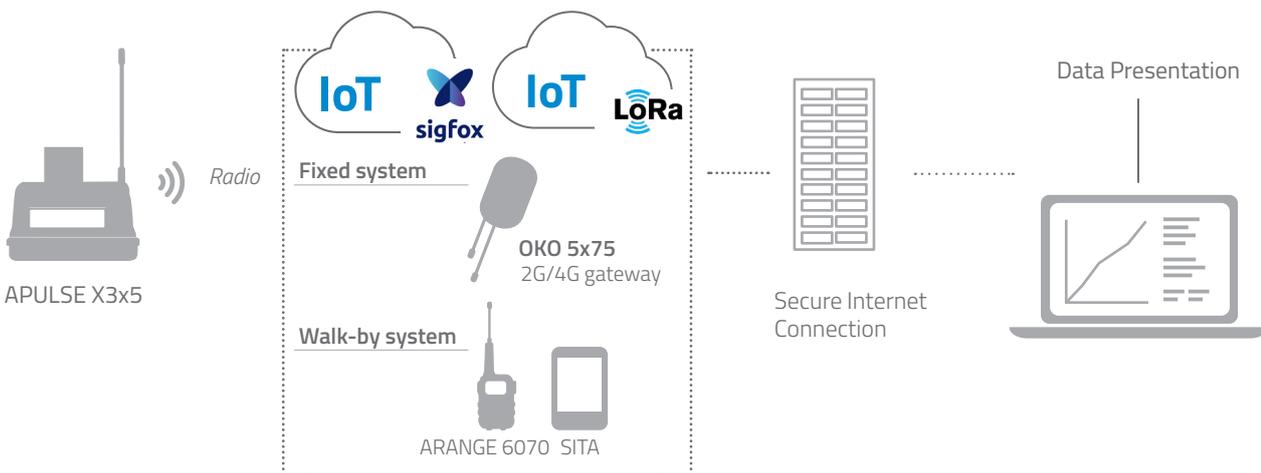
2. CERTIFICATIONS

-  II 1G Ex ia IIB T3 Ga
-  II 3G Ex ic IIB T3 Gc

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)

3. GENERAL DESCRIPTION



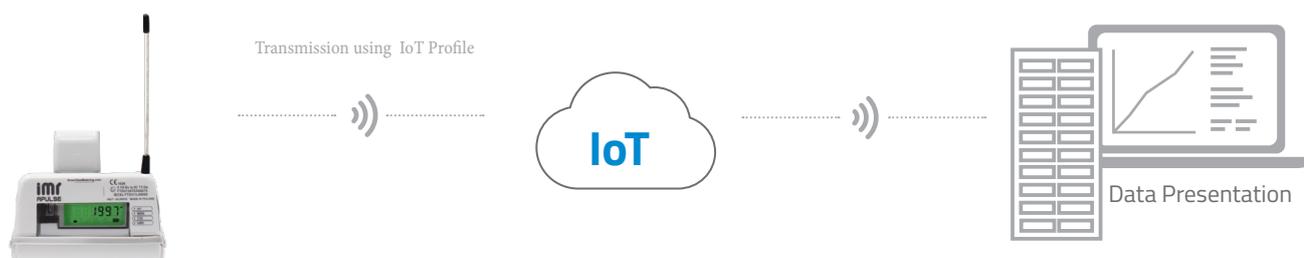
APULSE X3x5 is a universal wireless data logger with built-in pulse detector that can be installed on new or existing diaphragm meters. The device registers consumption profile as well as magnet and tamper detection. Once per day APULSE X3x5 sends the data via Sigfox or Lora low power network. Additionally, the data logger is designed for walk-by gas metering as well as fixed metering what makes it the most cost effective solution for individual housing, dense urban and block of flats. In case when device is out of range, OKO 5x75 can be used as 2G/4G mobile gateway

IMR Smart Gas Metering system, designed, developed and manufactured by AIUT, consists of communication equipment, data loggers, sensors as well as back office software package for data acquisition, analytics and presentation.

4. COMMUNICATION MODES

Profile IoT

APULSE X3x5 sends the data to the selected IoT cloud periodically (e.g. daily) from where it can be then redirected to IMR Server. Depending on the limitations of a selected type of IoT communication, APULSE can send only the basic information about the current consumption and device status or hourly measurements together with detailed diagnostic data. The limitations can also result from the selection of preferred, IoT connectivity technology.



Walk-By System

In Walk-by system APULSE X3 takes pulses from its gas meter. The data from APULSE X3 are read on chosen radio band with ARANGE 6070 that realizes bidirectional communication with gas meter's loggers. ARANGE 6070 can be connected to near Collector's terminal (notebook, Android device) by Bluetooth. Subsequently, these Collector's devices can be maintained directly by acquisition software.



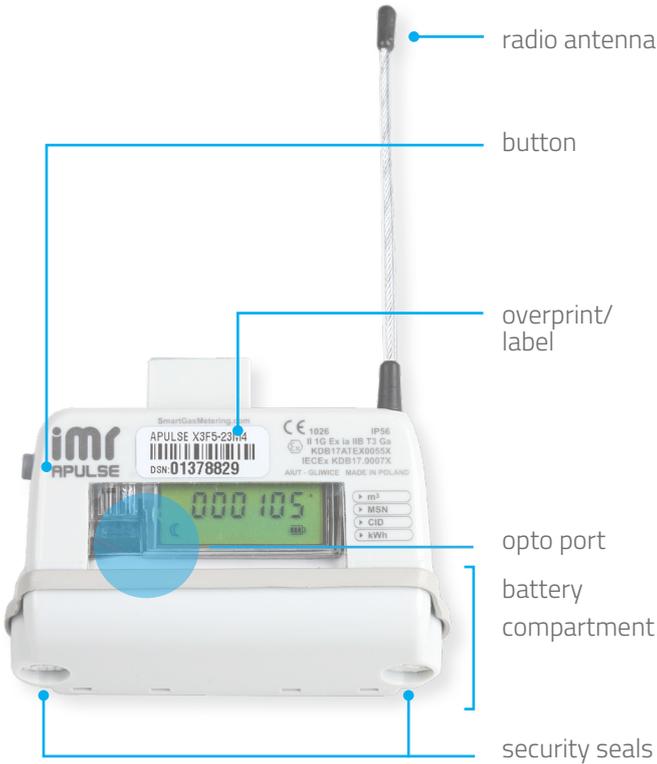
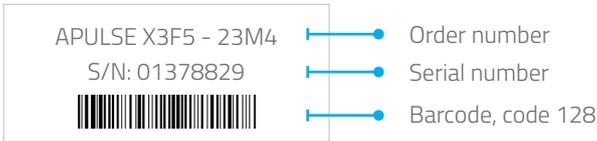
Fixed System

In Fixed System APULSE X3 installed on gas meter takes pulses from the meter and sends the data over radio to assigned OKO 5x75 concentrator. Subsequently, all data gathered by OKO device are sent over GPRS/SMS to IMR Server. The user gets the daily data (current state, daily statistics, daily data archive) and additionally, at the end of the day and month, APULSE X3 generates summary reports with hourly and daily consumption profile.



5. THE STRUCTURE OF THE DEVICE

OVERPRINT/LABEL



6. TECHNICAL PARAMETERS

Type of battery pack	Replaceable, single or double Li-SOCI2 battery
Ingress protection	IP 65
Operating temperature	-40°C ÷ +55°C
Ex marking (ATEX / UK Ex / IECEx)	II 1G Ex ia IIB T3 Ga or II 3G Ex ic IIB T3 Gc
Battery lifetime	up to 10 years
Dimensions h x w x d [mm]	75 x 82 x 29

*MULTIPROTOCOL IoT

LoRa - LoRa WAN specification: 1.0.2, Class-A device, Uplink Power: +14 dBm, Frequency Band: 867-869 MHz, 915-928 MHz

Sigfox - Designed for RCZ1, Class 0u (uplink only) device, Uplink Power: +14 dBm, Frequency Band: 868-868.6 MHz.

IMR- IMR radio based on modified WMBus Protocol, FSK modulation, SRD 860 band.

ORDER NUMBER

Generic information	Hardware version	Firmware version
APULSE X3x5	zuwo	displayed on LCD

x- type of radio interface

5 - transceiver 433 MHz FSK

7- transceiver 869 MHz FSK

F - multiprotocol 868 MHz (IMR-FSK, LoRa, Sigfox)*

z- power supply (battery type)

u- hardware version



1- built-in pulse sensor coupled with gas meter counter

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

4 - built-in pulse sensor coupled with gas meter counter (extended version)

w- interface for local communication

0 - mechanical button

1 - mechanical button, digital OC output

M - magnetic button

REPLICATION PULSE OUTPUT

Circuits	1 intrinsically safe circuit
Connector type	RJ-11 /RJ-9
Circuit type	Open collector output
Max cable length	3 m
Maximum input voltage U_i	30 V
Maximum input current I_i	37 mA
Maximum input power P_i	1.1 W
Maximum internal capacitance C_i	Negligible
Maximum internal inductance L_i	Negligible

7. MECHANICAL ASSEMBLY

The process of mechanical assembly is performed in the following way and varies depending on the used gas meter (and assigned adaptor). The general procedure can be described as follows:



1

Fix adapter to the gas meter and secure it with a plastic seal



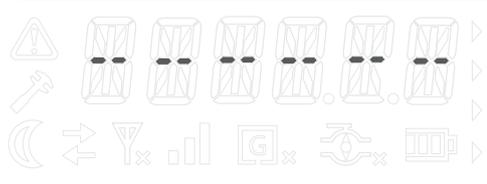
2

Fix APULSE to the adapter and secure it with plastic seals

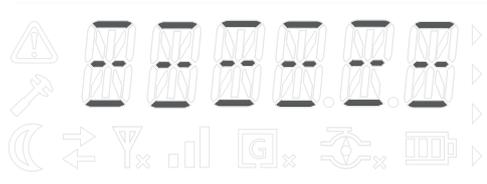


8. INITIALIZATION

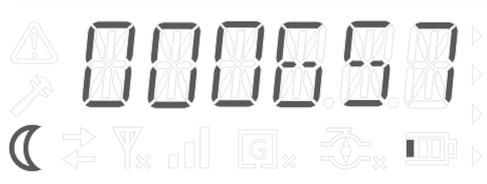
For safe transport and in order to minimize the battery consumption during the storage (prior the installation), the device is in seal-run mode directly after the production. It counts pulses but no remote communication is performed.



Device in seal-run mode. Long press the button/attach the magnet for 5 s.



Now, short press the button/swipe the magnet near the button



The device is initialized and ready for operation.

9. REPLICATED PULSE MEASUREMENT

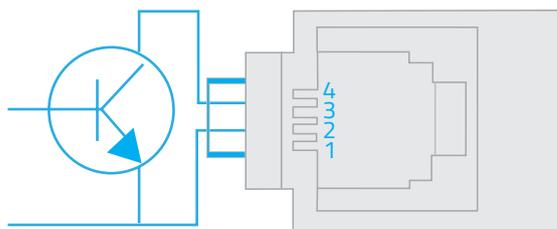
Thanks to the replicated pulse output, APULSE X3x5 can be connected to 3rd party data acquisition system. It is located in a dedicated IMR adapter and can provide meter pulse output connections to other meter pulse utilization devices, without interfering or disrupting the collection of data and having minimal drain 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
- 2 Plug the connector into the socket in the adapter as shown in the picture



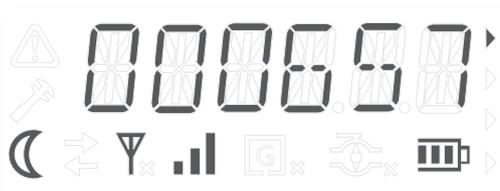
- 1 Short-circuited with wire no. 4*
- 2 Ground
- 3 Impulse output
- 4 Short-circuited with wire no. 1*

*Pins internally connected in the socket

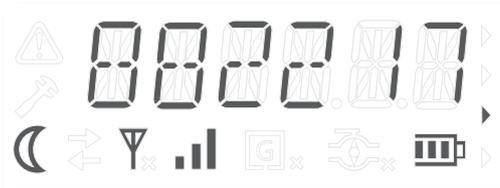


10. ACTIVATION

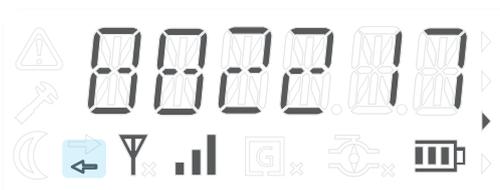
After waking up APULSE X3x5 from seal-run mode, it is in regular operation and sends radio frames (LoRa, Sigfox, walk-by or fixed frame, depending on configuration) with the frequency established in its radio mode. However, for diagnostic reasons, it is possible to send the frame manually on demand.



Repeatedly Short press the button/attach the magnet to enter the 3rd screen of Main Menu.



Now, press the button/attach the magnet for 3 seconds



The bottom arrow starts blinking - APULSE is sending the radio frame. Once the action is over, the arrow is off.

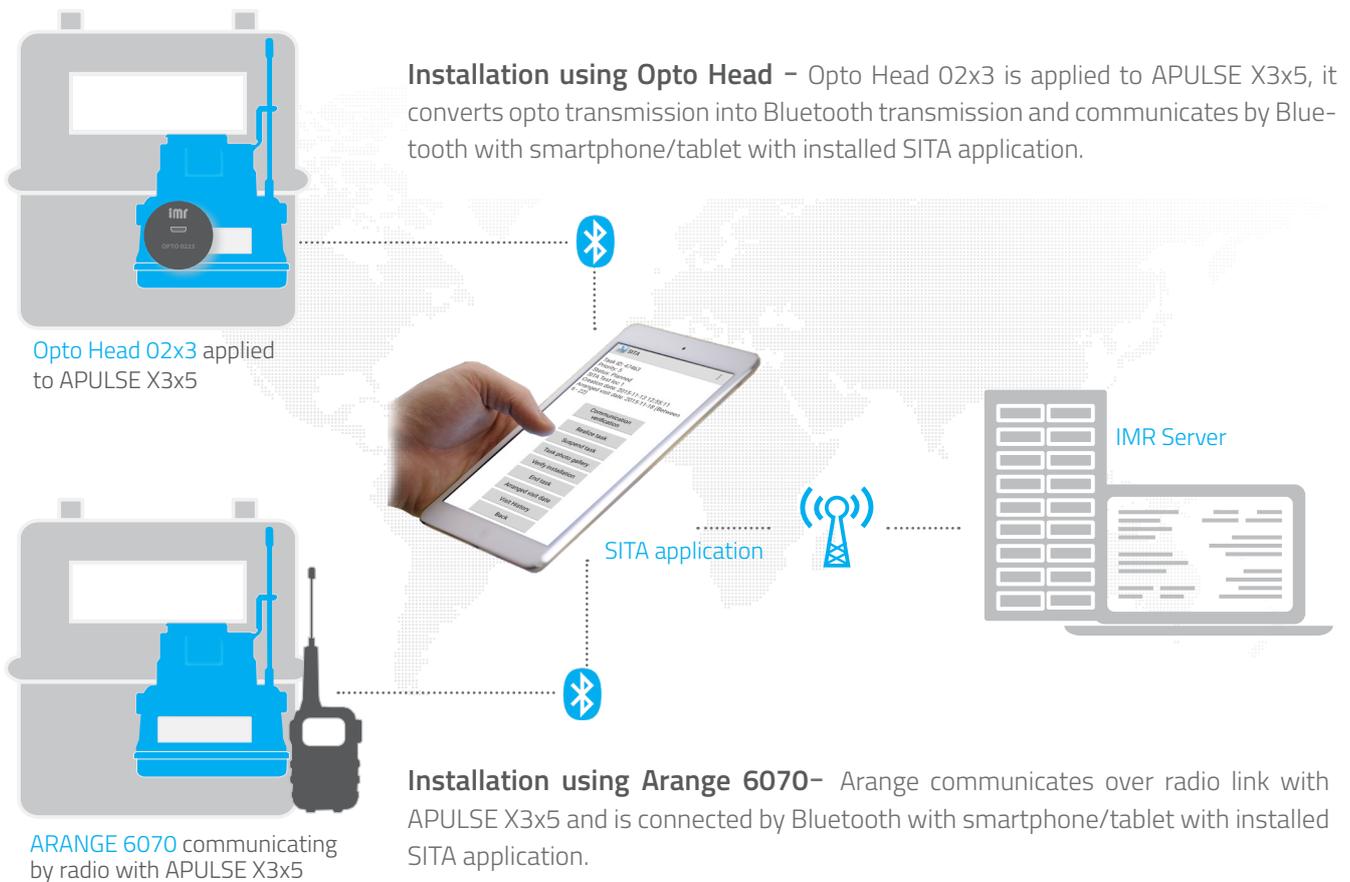
11. DEVICE COMMISSIONING WITH SITA

After the mechanical installation of APULSE X3x5, an action registering the device in particular location must be performed. The operation is performed with SITA application and ARANGE 6070 or Opto Head 02x3.

SITA is an application dedicated for mobile devices (smartphone, tablet) with android OS that supports the operational procedures such as installation/uninstallation and configuration of telemetry devices, as well as diagnostic operations and services (e.g. battery replacement).

The data and information collected during the procedures are sent directly from the application to IMR Server where they are further proceeded and presented in dedicated applications

METHODS of the INSTALLATION



STEPS of the INSTALLATION

- 1 In SITA application Installation Form is completed.
- 2 SMS action is sent to IMR Server. Confirm the correctness of the introduced data by sending it to the IMR Server. The server will start the automatic action of APULSE configuration according to the set parameters.
- 3 The action is executed. The status of the completed action (success or failure) is registered in the Server.
- 4 The User gets the response from the Server that is displayed in SITA.

12. DATA STRUCTURES

SCHEDULES

One of the most important APULSE 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 12 simultaneously operating schedules. The schedules allow starting the preconfigured command in APULSE on specified date and time and with determined frequency (once or periodically). Configured schedules are prepared according to client's need at the production stage.

ON DEMAND

It is possible to send the radio frame from APULSE device manually on request. To do so, enter the 3rd screen of main menu and press the button for 3s/attach the magnet to the button for 3 s. [For details see: Device activation.](#) Additionally, APULSE X3x5 is equipped with opto port for local communication with the device. Simply attach the opto head to the device and open the dedicated application for reading/writing the configurable parameters of APULSE X3x5.



Radio frame triggered on demand.

APULSE with attached Opto Head O2x3

NOTIFICATIONS

When the specific condition is met (e.g. external magnetic field, 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.

13. SCOPE OF DATA - radio frames

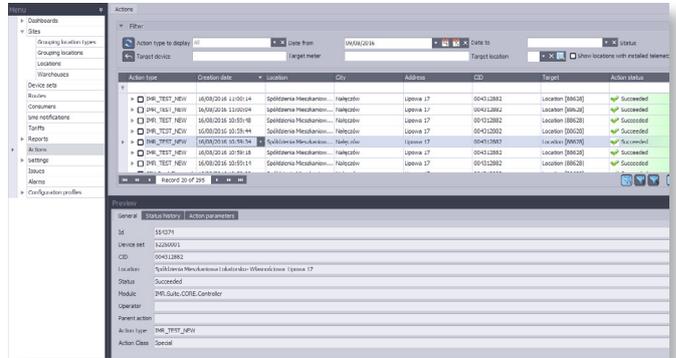
The content of radio frames sent by APULSE depends on the mode it is in (walk-by, fixed, LoRa, Sigfox) and its configuration. The exemplary information contained in the radio frame is listed below.

Type of data	Fixed	Walk-by	LoRa	Sigfox
Firmware version	√	√		
Pulse coefficient	√	√	√	√
Maximum value of the counter	√	√		
Calorific value of the gas	√	√		
Current device status	√			
Latched status of the device	√	√	√	√
Outgoing packets	√	√		
Incoming packets	√	√		
Min./max/average temperature	√			
Min./max/average monthly temperature		√		
Average temperature				√
Battery usage	√	√	√	√
Gas meter value	√	√	√	√
Energy	√	√		
Max. value of hourly flow and its timestamp	√	√		
Max. value of instantaneous flow and its timestamp	√			
Differential readouts - value of the volumes gained from the subsequent storing periods:				
- 24 hourly readouts from previous gas day	√		√	
- 31 daily readouts from previous month		√		
Daily archive from up to 3 months		√		

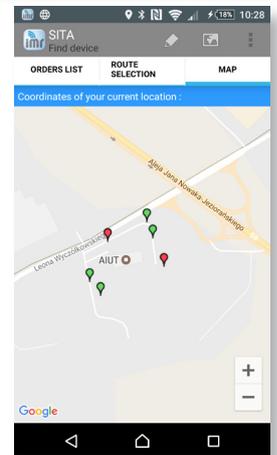
14. DATA ACCESS & CONFIGURATION

Data received from APULSE X3x5 can be acquired by IMR Server - a high performance, multi—protocol data collection system that enables data presentation on the Web Application, supervising on-site installations, device handling and daily system maintenance.

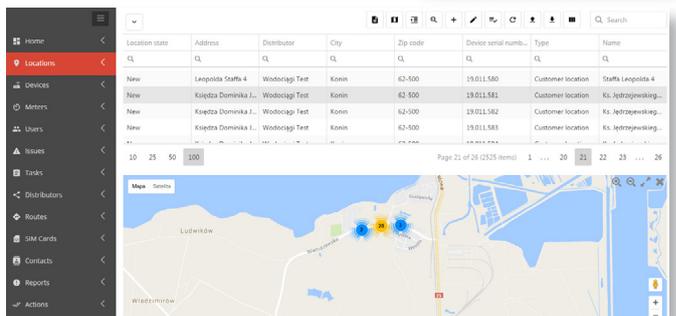
SGM Management Console - is a powerful management tool enabling the user to control the gas consumption, perform billing services and manage the locations and devices. The application helps to perform every action step by step and tackle the problem in a relatively short period of time.



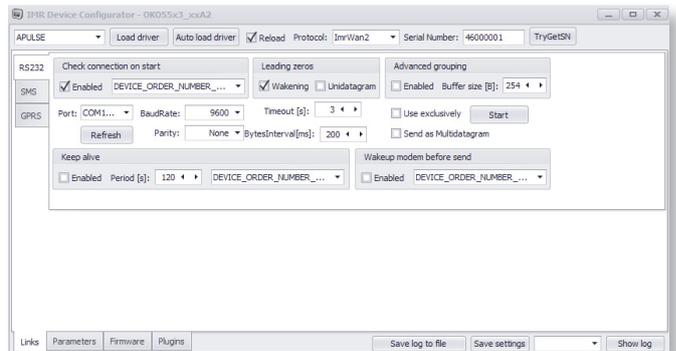
SITA - is a mobile application that enables to manage commands and collect readouts from telemetry devices installed on gas meters. Used in Walk-By System, the application, paired with ARANGE 6070, realizes bidirectional communication with telemetry devices (i.e. Apulse) and subsequently sends the data to a back-office server. Additionally, the application is used to register APULSE in the system.



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.



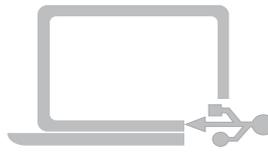
IMR Device Configurator - is an application used for APULSE configuration, maintenance and diagnostics. It enables to read/write configurable parameters assigned to the particular device.



15. LOCAL DATA ACCESS

OKO device is featured with Opto Port that enables to:

- Update the firmware
- Get access to device configuration, data, archives etc.
- Switch between different device modes: run/sleep/seal
- Run actions on devices
- Perform installation on-site



APULSE X3x5 with applied Opto Head 01x1 (with USB connection)



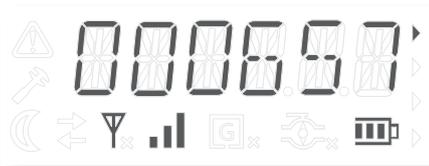
APULSE X3x5 with applied Opto Head 02x3 (with Bluetooth BLE 4.1)

Additionally APULSE X3x5 can communicate on chosen radio band with ARANGE 6070 that can be connected by BT to smartphone/tablet with dedicated application for readouts/installations.



APULSE X3x5

Opto Module



Short press the button/ attach the opto head to the opto port for 3 seconds in any screen of Main Menu.

Attach the opto head to opto port and connect the cable to USB port on your computer (concerns Opto Head 01x1).

Open the dedicated application for local communication and configuration ([SITA](#), [IMR Device Configurator](#)) and read/write the configurable parameters.

NOTE Opto Head 02x3 (with Bluetooth 4.1 BLE) is activated automatically once it is selected from the list of available BT devices in the application. After closing the application the opto head will change its mode to Waiting for communication.



Blue LED - Bluetooth communication

Smooth pulsing (t=4s) - waiting for communication

Solid blue - active connection

Blinking (t=0,5s) - data transfer in progress

NOTE In case of local communication with APULSE X3x5 installed in potentially explosive areas, it is possible to use only the equipment (Opto Head 02x3, computer) certified for use in hazardous areas. Otherwise the readout/configuration must be carried out beyond the area.

Possible statuses of opto module



OFF



WAITING FOR DATA



ACTIVE



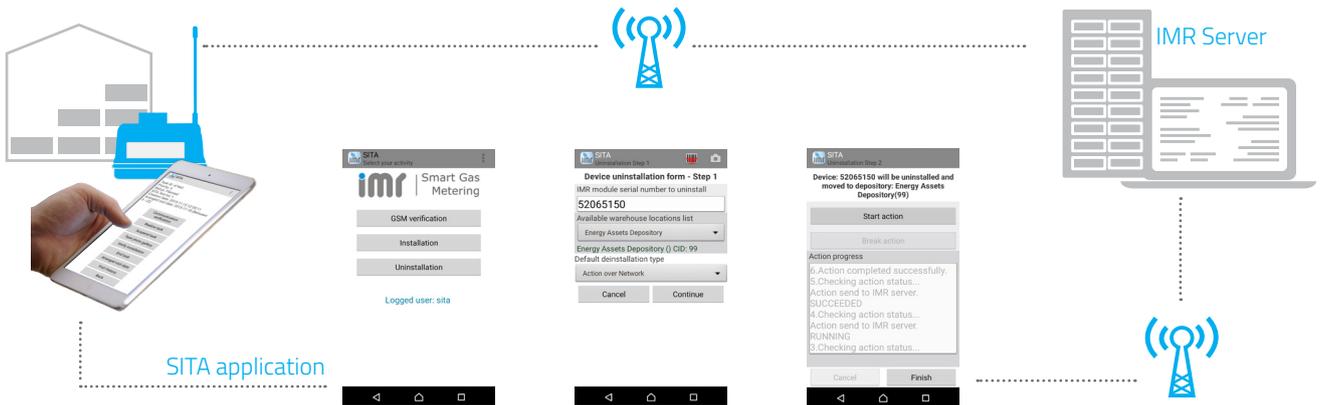
INACTIVE

16. UNINSTALLATION

The process of mechanical removal is performed in the following way and varies depending on the used gas meter (and assigned adaptor). The general procedure can be described as follows:



After the mechanical removal of APULSE X3, the device must be assigned to a depository location. As in case of device commissioning, the process is performed with SITA application.



17. BATTERY REPLACEMENT

1 Open the cover and take out the battery pack



2 Cut the battery wires as close to the battery as possible



NOTE Cut the battery wires separately to avoid short circuit and uncontrolled discharge of the remaining battery power.

3 Prepare a new battery pack and connect the wires of the same colour with wire connector



4



Put the battery pack into the body and close the cover



ARANGE 6070

ARANGE 6070 realizes bidirectional communication with telemetry devices installed in locations.

The device is connected by Bluetooth to collector's terminal (notebook, Android device) where SITA application is installed. In Walk-By System the collector moves around with ARANGE 6070 that receives radio transmission from APULSE or OLAN data loggers on a chosen radio band. Subsequently, the data are transferred to collector's terminal that is directly maintained by acquisition software.

OPTO HEAD 02x3

Opto Head 02x3 is a reliable, user-friendly device allowing proper Bluetooth BLE (Bluetooth Low Energy) communication with IMR telemetric 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 02x3 is a universal, easy to use tool that does not modify transferred data or influence the operation of the device it com



OPTO HEAD 01x1

Opto Head 01x1 USB is a reliable, user-friendly device allowing for proper communication with local IMR system's telemetry devices equipped with optical interface. Opto Head cooperates with every PC with dedicated software installed, enabling to configure a device and read-out data (IMR Device Configurator).

It is a flexible and easy to operate tool, that enables communication with devices via USB port. Opto Head does not interfere and modificate data from read-outs and does not affect the device work in any way.



OPTO HANDLE

Specially dedicated tool for IMR Devices enabling precise attachment of Opto Head to the opto port of the device.



TOOLS

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



ADAPTERS

TYPE OF ADAPTER

TYPE OF GAS METER

METER INDEX

Replicated pulse output (optional)

Adapter with embedded sensor

IC M015



- **Metrix**
UG1.6, UG2.5, 6G4, 6G5, 2G10, 2G16, 2G25, 2G40, 2G65, UG4, UGT4
- **Metrix Italia**
UG-ALU



YES
(IC M115)

YES

IC R015



- **Itron/Actaris/Schlumberger**
RF1, ACD

"o" series totalizer



YES
(IC R115)

YES

IC E015



- **Honeywell/Elster/Kromschroeder**
BK G1.6-BK G100
- **Gas Souzan**

Z3, Z6 series totalizer, steel case gas meter



YES
(IC E115)

YES

IC K015



- **Elektrometal**
EM G1.6, EM G2.5, EM G4
- **Kale Kalip**



YES
(IC K115)

YES

IC U015



- Supports any type of gas meter embedded with pulse output (also rotary and turbine gas meters with LF - Low Frequency pulse output. Prepared to mounted in a wall with screws, plastic ties or double sided tape.

YES
(IC U115)

YES

NOTE For more about adapters and their types please refer to *X3 Adapters - IC Series*.

ICON GUIDE



WARNING

- magnet tamper detection
- removal detection
- max/min temperature exceeded
- max flow exceeded



SLEEP

device in sleep mode (radio off or in walk-by sampling mode)



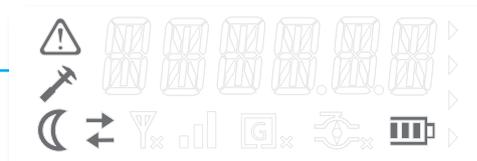
COMMUNICATION

- incoming correct package:
blinking 30sec then on, on next modem activation off
- outgoing package:
blinking 30 sec, then on (if succeeded), on next modem activation off



ERROR

- RTC error
- pulse counter error
- radio module error



EU TYPE EXAMINATION CERTIFICATE

APULSE X3x5 / APULSE X3x5
Wireless Radio Gas Meter Data Logger

Manufacturer: AIUT Sp. z o.o.

Address: ul. Wysokółkowskiego 113, 44-109 Gliwice, Poland

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

II IG Ex ia IIB T3 Ga
OC
II 3G Ex ic IIB T3 Go

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Conformity Assessment Body, 43-100 Mikołów, ul. Pułkowska 72

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SCHEDULE
EU type examination certificate
KDB 17ATEX0055X 3rd edition

[5] Description:
Wireless Radio Gas Meter Data Logger type APULSE X3x5 / APULSE X3x5 is an universal part of intelligent telemetry system for recording and wireless transmission of gas consumption data via a hub with GSM module. Communication with hub is made by internal close range radio interface. During the transmission, the server can read additional data from the device and change configuration.

The device is designed to be installed on many types of gas meters, without interfering with their current measuring and reading functions. Fitting the device to the type of gas meter is made by using a suitable mechanical adapter or mechanical-electrical adapter.

The device is powered by dedicated battery pack ABAT. The time between replacement of the battery pack depends on frequency measurement data transmission. Wireless Radio Gas Meter Data Logger type APULSE X3x5 / APULSE X3x5 is optionally equipped with an LCD display that shows the current state of the device and enable to verify the correct gas consumption of the device, by comparing it to the mechanical meter counter. The internal button or internal magnetic switch is used to select the function indicated by the display. The device additionally has internal ambient temperature sensor.

If the ABAT E191-2101 (APULSE **** - 9 **) battery package is used, the device can only be used in zone 2.

The device has two alternative marking versions, which are described below:

APULSE	X	3	x	5	-	x	u	w	w
APULSE	N	3	y	3	-	x	u	w	w

Position: 1 2 3 4 5, 1, 6, 7 8

Position	Description
1	SFD radio communication frequency:
5	5 - 433 MHz
7	7 - 869 MHz
8	8 - 140 MHz
9	9 - 869 MHz

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SCHEDULE
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[6] Type of power supply:

- 0 - power supply by the ABAT package I145-1105 (EVE)
- 1 - power supply by the ABAT package I145-2103 (EVE with internal limiting resistor)
- 2 - power supply by the ABAT package E145-1105 (SAFT)
- 3 - power supply by the ABAT package E145-2103 (SAFT with internal limiting resistor)
- 4 - power supply by the ABAT package I145-1105 (Eternacell)
- 5 - power supply by the ABAT package I145-2103 (Eternacell with internal limiting resistor)
- 6 - power supply by the ABAT package E145-1201/1202 (SAFT with internal limiting resistor)
- 7 - power supply by the ABAT package E145-1201/1202 (SAFT with internal limiting resistor)
- 8 - power supply by the ABAT package I145-1201/1202 (Eternacell with internal limiting resistor)
- 9 - ABAT E191-2101 - package to be used only in zone 2
- A - ABAT E174-1101
- B - ABAT E145-1105
- C - ABAT E145-1201 or 1202
- D - ABAT E145-2103

Hardware version:

- 1 - internal coupling interface with meter counter (magnetic coupling)
- 3 - input connector to the adapter with interface to coupling with meter counter (PCL2/P)
- 4 - internal coupling interface (elongated overlay) for gas meter counters (magnetic coupling)
- 6 - internal coupling interface with gas meter pulse KDM

Interface of local communication with the system and the user:

- 0 - mechanical wake-up switch
- 1 - mechanical wake-up switch, digital output type OC (impulse interface)
- 2 - magnetic wake-up read switch, no LCD
- 3 - magnetic wake-up read switch, no LCD
- M - magnetic wake-up read switch

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[8] Main board code:

- 1 - APULSE xxx1-xxx1
- 3 - APULSE xxx2-xxx2
- 4 - APULSE xxx3-xxx3
- 5 - APULSE xxx4-xxx4
- 7 - APULSE xxx5-xxx5

Technical parameters:

Ambient temperature: -40°C + 55°C
Ingress protection: IP 20

Intrinsically safe parameter:

Uo = 3,9 V Io = 1,9mA
Io = 30 mA Co = 1000µF
Po = 25 mW

[6] Test Report: "ATEX assessment report" KDB No 17.071-3

[7] Special conditions of use:

- Ambient temperature range is -40°C + 55°C;
- The device may not operate in conditions that result accumulation of electrostatic charges on the surface of the enclosure - do not rub the enclosure with a dry cloth;
- Polarity in all junctions might be reversed in case of wrong installation of the battery package. External circuits can be connected only to properly worked APULSE device or shall be protected against polarity reversal;
- In case of necessary to open the enclosure, the device must be protected by any means against moisture and dust.

[9] Essential health and safety requirements:
Met by fulfilling the requirements of the following standards:
EN IEC 60079-0:2018 (EN-EN IEC 60079-0:2018-09);
EN 60079-11:2012 (EN-EN 60079-11:2012);

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EU type examination certificate
KDB 17ATEX0055X 3rd edition

[10] Document history:

- EU type examination certificate KDB 17ATEX0055X, 0 edition of 14.09.2017, initial certification
- EU type examination certificate KDB 17ATEX0055X, 1st edition of 14.06.2018, supersedes the certificate KDB 17ATEX0055X, 0 edition of 14.09.2017. Changes in the intrinsically safe circuits of the device have been introduced.
- EU type examination certificate KDB 17ATEX0055X, 2nd edition of 17.12.2019, supersedes the certificate KDB 17ATEX0055X, 1st edition of 14.06.2018. Changes in the intrinsically safe circuits and enclosure of the device have been introduced.
- EU type examination certificate KDB 17ATEX0055X, 3rd edition of 25.03.2020, supersedes the certificate KDB 17ATEX0055X, 2nd edition of 17.12.2019. The possibility of using new battery pack has been introduced.

Central Mining Institute, 40-56 Katowice, Pocz. Główna 1
Conformity Assessment Body, 43-100 Mikołów, ul. Pułkowska 72

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IECEX Certificate of Conformity
INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

Certificate No.: **IECEX KDB 17.0007X** Page 1 of 4
Series: **Current** Issue No: 3
Date of issue: **2020-03-25**
Applicant: **AIUT Sp. z o.o.**
ul. Wolyczkowskiego 113, 44-100 Gliwice
Equipment: **APULSE N3x5 / APULSE 5x5x5 Wireless Radio Gas Meter Data Logger**
Optional accessory:
Type of Protection: **Equipment protection by intrinsic safety "I"**
Marking: **Ex ia IIB T3 Gc**
or
Ex ia IIB T3 Gc

Approved by (name and behalf of the IECEx Certification Body): **Andrzej Trzaskowski**
Position: **Deputy Head of EUCB**
Signature: *[Signature]*
Date: **20 03 - 03 - 21**

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not valid and ceases to exist in the absence 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:
Ogłoszenie Wydziału Górniczego, Kopalnia Doświadczalno-Produkcyjna "Mikrobudowa"
(Central Mining Institute Experimental Mine "Mikrobudowa")
ul. Piłsudskiego 72
42-100 Mikulice
Polska



IECEX Certificate of Conformity

Certificate No.: **IECEX KDB 17.0007X** Page 2 of 4
Date of issue: **2020-03-25** Issue No: 3

Manufacturer: **AIUT Sp. z o.o.**
ul. Wolyczkowskiego 113, 44-100 Gliwice
Polska

Additional manufacturing information:
This certificate is based on information that a sample, representative of production, was assessed and tested and found to comply with the IEC Standard for which the manufacturer's safety covers, relating to the CE products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is general subject to the conditions set out in IECEx General Rules, IECEx CE and Operational Documents as amended.

REMARKS:
The equipment and any acceptable variations is specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:
IEC 60078-0:2017 Explosion atmospheres - Part 0: Equipment - General requirements
Edition 0
IEC 60078-1:2013 Explosion atmospheres - Part 1: Equipment protection by intrinsic safety "I"
Edition 0
This Certificate does not include compliance with any performance requirements other than those expressly included in the Certificate listed above.

TEST & ASSESSMENT REPORTS:
A sample of the equipment tested has successfully met the examination and test requirements as recorded in:
Test Report: **PLA3085.1712.000503**
Quality Assessment Report: **CEP72.024943.000503**

IECEX Certificate of Conformity

Certificate No.: **IECEX KDB 17.0007X** Page 3 of 4
Date of issue: **2020-03-25** Issue No: 3

EQUIPMENT:
Equipment and options covered by this Certificate are as follows:
Wireless Radio Gas Meter Data Logger type APULSE N3x5 / APULSE 5x5x5 is an universal part of intelligent battery system for monitoring and wireless transmission of gas consumption data via a hub with GSM module. Communication with hub is made by internal coupling radio interface. During the measurement, the sensor can read mechanical data from the device and change configuration.
The device is designed to be installed on many types of gas meters, without interfering with their current measuring and marking functions. Please the device in the case of gas meter is made by using a suitable mechanical adapter or mechanical electrical adapter.
The device is powered by dedicated battery pack ABAT. The time between replacement of the battery pack depends on frequency measurement data frequency. Wireless Radio Gas Meter Data Logger type APULSE N3x5 / APULSE 5x5x5 is specially equipped with an LCD display that shows the current state of the device and enables to verify the correct gas consumption of the device, by comparing it with the recorded in meter counter. The internal fusion or external magnetic switch is used to protect the function indicated by the display. The device automatically has internal ambient temperature sensor.
If the ABAT EL51 2101 (APULSE 5x5x5) battery package is used, the device can only be used in zone 2.

Technical parameters:
Ambient temperature: **-40°C + +60°C**
Ingress protection: **IP 23**

Electrical safe operation:
U_{max} = 3.0V U_o = 1.50mA
I_{sc} = 30mA C_o = 200µF
P_o = 25mW

SPECIFIC CONDITIONS OF USE, YES as shown below:
• Ambient temperature range: **-40°C + +60°C**
• The device may not operate in conditions that result in accumulation of electrostatic charge on the surface of the device - do not rub the enclosure with dry clothes.
• Points in CE marking right to be viewed in case of any modification of the battery package. External contacts can be connected only to specially approved APULSE device and should be protected against tampering.
• In case of necessary to open the enclosure, the device must be protected by dry means against moisture and dust.

IECEX Certificate of Conformity

Certificate No.: **IECEX KDB 17.0007X** Page 4 of 4
Date of issue: **2020-03-25** Issue No: 3

DETAILS OF CERTIFICATE CHANGES (see Issues 1 and above):
The possibility of using new battery packs has been introduced.

Access:
GIG_KDB_17_0007X_03_schudzenie.pdf

Attachment to Certificate
IECEX KDB 17.0007 Issue No: 3

Description of type:
The device has two alternative marking versions, which are described below:

APULSE	X	3	5	-	x	M	x
APULSE	N	3	3	-	x	M	x
Position:	1	2	3	4	5	6	7

Position	Description
3	SRD radio communication frequency: 5 - 433 MHz 7 - 869 MHz 9 - 189 MHz F - 569 MHz
5	Type of power supply: 0 - power supply by the ABAT package L145-1105 (EVE) 1 - power supply by the ABAT package L145-2103 (EVE with internal limiting resistor) 2 - power supply by the ABAT package E145-1105 (SAFT) 3 - power supply by the ABAT package E145-2103 (SAFT with internal limiting resistor) 4 - power supply by the ABAT package H145-1105 (Eternacef) 5 - power supply by the ABAT package H145-2103 (Eternacef with internal limiting resistor) 6 - power supply by the ABAT package L145-12011202 (EVE with internal limiting resistor) 7 - power supply by the ABAT package E145-12011202 (SAFT with internal limiting resistor) 8 - power supply by the ABAT package H145-12011202 (Eternacef with internal limiting resistor) 9 - ABAT EL51-2101 - package to be used only in zone 2

At any time contact:
Ogłoszenie Wydziału Górniczego, Kopalnia Doświadczalno-Produkcyjna "Mikrobudowa"
ul. Piłsudskiego 72
42-100 Mikulice
tel. +48 32 22 40 891 fax. +48 32 22 24 241
www.mikrobudowa.com.pl

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Attachment to Certificate
IECEX KDB 17.0007 Issue No: 3

A - ABAT P174-1101 B - ABAT T145-1105 C - ABAT T145-1201 or 1202 D - ABAT T145-2102	Hardware versions: 1 - internal coupling interface with meter counter (magnetic coupling) 3 - input connector to the adapter with interface coupling with meter counter (D-PLUG) 4 - internal coupling interface (longulated overlay) for gas meter counters (magnetic coupling) 6 - internal coupling interface with gas meter pulser AEM
7	Interface of local communication with the system and the user: 0 - mechanical wake-up switch 1 - mechanical wake-up switch, digital output type OC (impulse interface) 2 - magnetic wake-up reed switch, no LCD 3 - magnetic wake-up reed switch, no LCD M - magnetic wake-up reed switch
8	Main board code: 1 - APULSE w04-w01 3 - APULSE w04-w03 4 - APULSE wF5-w04 5 - APULSE wF5-w05 7 - APULSE wF5-w07

At any time contact:
Ogłoszenie Wydziału Górniczego, Kopalnia Doświadczalno-Produkcyjna "Mikrobudowa"
ul. Piłsudskiego 72
42-100 Mikulice
tel. +48 32 22 40 891 fax. +48 32 22 24 241
www.mikrobudowa.com.pl

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**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 2019:896) – Schedule 3A, Part 1**

- 3 Certificate Number: **ExVeritas 22UKEX1482X** Issue: **0**
- 4 Product: **APULSE N3y3 / APULSE X3y5 Wireless Radio 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 2019:896), 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:

II 1G Ex ia IIB T3 Ga
Ta = -40°C to +55°C



No. 8613

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Schedule

13 Description of Product

Wireless Radio Gas Meter Data Logger type APULSE N3y3 / APULSE X3y5 is a universal part of intelligent telemetry system for recording and wireless transmission of gas consumption data via a hub with GSM module. Communication with hub is made by internal close range radio interface. During the transmission, the server can read additional data from the device and change configuration.
The device is designed to be installed on many types of gas meters, without interfering with their current measuring and reading functions. Fitting the device to the type of gas meter is made by using a suitable mechanical adapter or mechanical-electrical adapter.
The device is powered by dedicated battery pack ABAT. The time between replacement of the battery pack depends on frequency measurement data transmission. Wireless Radio Gas Meter Data Logger type APULSE N3y3 / APULSE X3y5 is optionally equipped with an LCD display that shows the current state of the device and enable to verify the correct gas consumption of the device, by comparing it to the mechanical meter counter. The internal button or internal magnetic switch is used to select the function indicated by the display. The device additionally has internal ambient temperature sensor.

Intrinsically safe parameters: Uo = 3.9V, Io = 30 mA, Po = 25 mW, Lo = 1.5 mH, Co = 1000 µF

The part number disambiguation is given below:

APULSE	X	N	3	y	3	-	z	u	w	v
Position:	1	2	3	4	5	6	7	8	9	10

Position	Meaning
3	Radio communication band SRD 5 – 433 MHz 7, F – 869 MHz 9 – 188 MHz
5	Battery pack: 0 – ABAT L145-1105 1 – ABAT L145-2103 2 – ABAT E145-1105 3 – ABAT E145-2103 4 – ABAT H145-1105 5 – ABAT H145-2103 6 – ABAT L145-1201 or -1202 7 – ABAT E145-1201 or -1202 8 – ABAT H145-1201 or -1202 A – ABAT P174-1101 B – ABAT T145-1105 C – ABAT T145-1201 or -1202 D – ABAT T145-2103
6	Hardware versions: 1 – internal coupling interface with meter counter (magnetic coupling) 3 – connector dedicated for adapters with built-in pulse sensor coupled with gas meter counter (PULLUP) 4 – built-in pulse sensor coupled with gas meter counter (extended version) 6 – built-in pulse sensor coupled with AEM gas meter counter
7	Interface for local communication: 0 – mechanical button for device activation 1 – mechanical button for device activation, digital output type OC (pulse interface) 2, 3 – magnetic reed switch for device activation, no LCD M – magnetic reed switch for device activation
8	Main PCB version.

Certificate: **ExVeritas 22UKEX1482X**

Issue **0**

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Schedule

Position	Meaning
1	APULSE xxx5-xxx1
3	APULSE xxx5-xxx3
4	APULSE xxF5-xxx4
5	APULSE xxF5-xxx2
7	APULSE xxF5-xxx7

14 Descriptive Documents

14.1 Associated Report and Certificate History:

Report Number	Cert Issue Date	Issue	Comment
R3536A/1	12/12/2022	0	Initial issue of the Prime Certificate

14.2 Compliance Drawings:

Title	Document	Revision	Date
Technical documentation	ExS-DT-04-1738-0	-	08/2017
Assessment results for complying harmonized standards requirements	ExS-A-04-1738-0	-	05/09/2017
Montaz ABAT x145-2103-0001	03-184-09-01	1.1	09/08/2013
Montaz APULSE xxx3-xxx2	03-184-09-01	1.2	15/05/2013
Montaz PULSE xxx3-xxx2	03-184-09-01	1.1	16/01/2013
Montaz RFPULSE xxx3-1xx1	03-184-09-01	1.0	14/05/2013
Subassembly ABAT x145-1105	03-202-15-01	1.1	11/08/2017
Subassembly ABAT x145-1201	03-202-15-01	1.1	11/08/2017
Subassembly APULSE xxx5-xxx1	03-202-15-01	1.1	11/08/2017
Subassembly APULSE xxx5-xxx3	03-202-15-01	1.2	11/08/2017
Subassembly NPULSE xxx5-xxx0	03-202-15-01	1.0	28/03/2017
Subassembly PULSE xxx5-1xx2	03-202-15-01	1.0	28/03/2017
Subassembly PULSE xxx3-xxx3	03-202-15-01	1.0	28/03/2017
Subassembly PULSE xxx5-xxx2	03-202-15-01	1.0	28/03/2017
Zobraz APULSE xxx3-xxx2	03-184-09-01	1.2	29/03/2020
Technical documentation	ExS-DT-04-1814-0	-	03/04/2018
Assessment results for complying harmonized standards requirements	ExS-A-04-1814-0	-	03/04/2018
APULSE N3y3 / APULSE X3y5 Ex documentation – Update 1	03-202-15-01	1.0	15/03/2018
Subassembly ABAT x145-1202	03-202-15-01	1.0	15/03/2018
Subassembly APULSE xxx5-xxx4	03-202-15-01	1.0	15/03/2018
APULSE N3y3 / APULSE X3y5 Ex documentation – Update 2	DOC01	1.0	07/08/2019
User manual – minimum content	03-202-15-01	2.0	07/2019
Schematics	DRW01	1.0	07/08/2019
Printed boards	DRW02	1.0	07/08/2019
Component list	LST01	1.0	07/08/2019
APULSE N3y3 / APULSE X3y5 Ex documentation – Update 3	DOC01	1.0	27/02/2020
User manual – minimum content	03-202-15-01	1.0	03/2020
ATEX Assessment Report	17-071-3	-	25/03/2020
Ex documentation addendum	DOC01	1.0	18/10/2022
User manual – minimum content	03-202-15-01	1.0	10/2022

15 Conditions of certification

15.1 Special Conditions for Safe Use

Certificate: **ExVeritas 22UKEX1482X** Issue **0**

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Schedule

- Ambient temperature range: -40°C to +55°C.
- The device may not operate in conditions that result in the accumulation of electrostatic charge on the surface of the enclosure – do not rub the enclosure with a dry cloth.
- Polarity in J2 junction might be reversed in case of wrong installation of the battery package. External circuits can be connected only to properly worked APULSE device of shall be protected against polarity reversal.
- When it is necessary to open the enclosure, the device must be protected against moisture and dust.

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.

Certificate: **ExVeritas 22UKEX1482X**

Issue **0**

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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 22UKEX1483X Issue: 0

4 Product: APULSE N3y3 / APULSE X3y5 Wireless Radio 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.

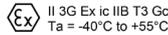
8 The product has been assessed against the following Standards and found to comply:

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:



No. 8613

On behalf of ExVeritas

Signature of S. Clarke CEng MSc FIET Managing Director

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Schedule

12 Description of Product

Wireless Radio Gas Meter Data Logger type APULSE N3y3 / APULSE X3y5 is a universal part of intelligent telemetry system for recording and wireless transmission of gas consumption data via a hub with GSM module. Communication with hub is made by internal close range radio interface. During the transmission, the server can read additional data from the device and change configuration.

The device is designed to be installed on many types of gas meters, without interfering with their current measuring and reading functions. Fitting the device to the type of gas meter is made by using a suitable mechanical adapter or mechanical-electrical adapter.

The device is powered by dedicated battery pack ABAT. The time between replacement of the battery pack depends on frequency measurement data transmission. Wireless Radio Gas Meter Data Logger type APULSE N3y3 / APULSE X3y5 is optionally equipped with an LCD display that shows the current state of the device and enable to verify the correct gas consumption of the device, by comparing it to the mechanical meter counter. The internal button or internal magnetic switch is used to select the function indicated by the display. The device additionally has internal ambient temperature sensor. The device can only be used in zone 2.

Intrinsically safe parameters: Uo = 3.9V, Io = 30 mA, Po = 25 mW, Lo = 1.5 mH, Co = 1000 µF

The part number disambiguation is given below:



Position	Meaning
3	Radio communication band SRD 5 - 433 MHz 7, F - 869 MHz 9 - 169 MHz
5	Battery pack: 9 - ABAT EL01-2101
6	Hardware versions: 1 - internal coupling interface with meter counter (magnetic coupling) 3 - connector dedicated for adapters with built-in pulse sensor coupled with gas meter counter (PULLUP) 4 - built-in pulse sensor coupled with gas meter counter (extended version) 6 - built-in pulse sensor coupled with AEM gas meter counter
7	Interface for local communication: 0 - mechanical button for device activation 1 - mechanical button for device activation, digital output type OC (pulse interface) 2, 3 - magnetic reed switch for device activation, no LCD M - magnetic reed switch for device activation
8	Main PCB version: 1 - APULSE xxx5-xxx1 3 - APULSE xxx5-xxx3 4 - APULSE xxx5-xxx4 5 - APULSE xxx5-xxx5 7 - APULSE xxx5-xxx7

13 Descriptive Documents

13.1 Associated Report and Certificate History:

Report Number	Cert Issue Date	Issue	Comment
R0356/A-1	12/12/2022	0	Initial issue of the Prime Certificate

Certificate: ExVeritas 22UKEX1483X Issue 0

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Schedule

13.2 Compliance Drawings:

Title	Document	Revision	Date
Technical documentation	ExS-DT-04-1738-0	-	08/2017
Assessment results for complying harmonized standards requirements	ExS-A-04-1738-0	-	05/08/2017
Montaz ABAT x145-2103-0001	03-164-09-01	1.1	08/05/2013
Montaz APULSE xxx3-xxx2	03-164-09-01	1.2	15/05/2013
Montaz PULSE xxx3-xxx2	03-164-09-01	1.1	16/01/2013
Montaz RPULSE xxx3-1xx1	03-164-09-01	1.0	14/02/2013
Subassembly ABAT x145-1105	03-202-15-01	1.1	11/08/2017
Subassembly ABAT x145-2101	03-202-15-01	1.1	11/08/2017
Subassembly ABAT x145-2103	03-202-15-01	1.1	11/08/2017
Subassembly APULSE xxx5-xxx1	03-202-15-01	1.2	11/08/2017
Subassembly APULSE xxx5-xxx3	03-202-15-01	1.2	11/08/2017
Subassembly NPULSE xxx5-xxx0	03-202-15-01	1.0	28/03/2017
Subassembly PULSE xxx3-1xx2	03-202-15-01	1.0	28/03/2017
Subassembly PULSE xxx3-xxx3	03-202-15-01	1.0	28/03/2017
Subassembly PULSE xxx5-xxx2	03-202-15-01	1.0	28/03/2017
Zobraz APULSE xxx3-xxx2	03-164-09-01	1.2	20/03/2020
Technical documentation	ExS-DT-04-1814-0	-	03/04/2018
Assessment results for complying harmonized standards requirements	ExS-A-04-1814-0	-	03/04/2018
APULSE N3y3 / APULSE X3y5 Ex documentation - Update 1	03-202-15-01	1.0	15/03/2018
Subassembly ABAT x145-1202	03-202-15-01	1.0	15/03/2018
Subassembly APULSE xxx5-xxx4	03-202-15-01	1.0	15/03/2018
APULSE N3y3 / APULSE X3y5 Ex documentation - Update 2	EXD021	1.0	07/08/2019
User manual - minimum content	03-202-15-01	2.0	07/2019
Schematics	DRW01	1.0	07/08/2019
Printed boards	DRW02	1.0	07/08/2019
Component list	LS101	1.0	07/08/2019
APULSE N3y3 / APULSE X3y5 Ex documentation - Update 3	D0021	1.0	27/02/2020
User manual - minimum content	03-202-15-01	1.0	03/2020
ATEX Assessment Report	17-071-3	-	25/03/2020
Ex documentation addendum	D0021	1.0	18/10/2022
User manual - minimum content	03-202-15-01	1.0	10/2022

14 Specific conditions of use

14.1 Special conditions for safe use

- Ambient temperature range: -40°C to +55°C.
- The device may not operate in conditions that result in the accumulation of electrostatic charge on the surface of the enclosure - do not rub the enclosure with a dry cloth.
- Polarity in J2 junction might be reversed in case of wrong installation of the battery package. External circuits can be connected only to properly worked APULSE device of shall be protected against polarity reversal.
- When it is necessary to open the enclosure, the device must be protected against moisture and dust.

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.

Certificate: ExVeritas 22UKEX1483X Issue 0

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FO-CB-88 V1

File: DoC_APULSE_X3x5_eng_v6.pdf		Gliwice, November 2023	
EU DECLARATION OF CONFORMITY DECLARATION OF CONFORMITY			
Product APULSE X355/X375/X3F5 Wireless Radio Gas Meter Data Logger			
Name and address of the manufacturer AIUT Sp. z o.o., ul. Wyczołkowskiego 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 APULSE X355/X375/X3F5 is a universal, intrinsically safe, wireless data logger, that consists of plastic enclosure, battery pack and electronics. APULSE X355/X375/X3F5 installed on gas meter takes pulses from the meter and sends the data (regular archive data and alarms) over licence-free radio link (IMR, LoRa, Sigfox) to the data concentrator. The device is powered by primary lithium cells what ensures 5-10 years lifetime. Built-in 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	Council Directive: 2014/53/EU		
REK	The Radio Equipment Regulations 2017 - UKSI 2017 No. 1206		
Harmonized standards	Art. 3.1(a) The protection of the health and the safety of persons		
Designated standards	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. 3.1(b) 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		
Final Draft ETSI EN 301 489-3 V2.1.1	Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 MHz and 246 GHz; 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 300 220-2 V3.1.1		Short Range Devices (SRD) operating in the frequency range 25 MHz to 1 000 MHz; Part 2: Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU for non-specific radio equipment	
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)		Central Mining Institute, Experimental Mine "Barbara", Poland	
body identification number		1453	
has performed		conformity assessment procedure according to Module B: EU-Type Examination	
and issued the Certificate:		KDB 17 ATEX 0055X issue 0 16.08.2017 + supplement No. 1 14.06.2018 + supplement No. 2 17.12.2019 + supplement No. 3 25.03.2020  II 1G Ex Ia IIB T3 Ga  II 3G Ex Ic IIB T3 Gc (APULSE ****-g****)	
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 KDB 17 0007X	
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		Z585	
has performed		conformity assessment procedure according to Part 1 of Schedule 3A – Type Examination	
and issued the Certificates:		ExVeritas 23UKEX1482X  II 1G Ex Ia IIB T3 Ga ExVeritas 23UKEX1482X  II 3G Ex Ic IIB T3 Gc (APULSE ****-g****)	



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The UKCA approved body	Ex Veritas Limited, United Kingdom
body identification number	Z585
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 23UKQAND330
Product is certified under IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.	
IECEx Certificate No.	IECEx OBAC 23.0004X
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	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:	Prepared by:
 Artur Gabrys AIUT Sp. z o.o. ul. Wyczołkowskiego 113 44-109 Gliwice, Poland Tel.: +48 32 775 40 00 Fax: +48 32 775 40 01 biuro@aiut.com	 Grzegorz Szolc Certification Engineer 



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Jednostka Opiniująca,
Atestująca i Certyfikująca Wyroby
TEST Sp. z o.o.

(1) **CERTIFICATE
OF ENCLOSURE PROTECTION DEGREE
No. TEST/018/IP/2018**

- (2) Manufacturer: AIUT Sp. z o.o.
 (3) Address: **ul. Wyczółkowskiego 113, 44-100 Gliwice**
 (4) Device: **APULSE X3F5 Wireless Radio Gas Meter Data Logger**
 (5) Tested degree of enclosure protection: **IP65**
 (6) Jednostka Opiniująca, Atestująca i Certyfikująca Wyroby TEST Sp. z o.o. ("TEST" Product Assessment, Approval and Certification Body Ltd.), on the basis of tests carried out according to standard PN-EN 60529:2003, 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 Laboratorium Badawcze Jednostki TEST Sp. z o.o. (Testing Laboratory of "TEST" Body Ltd.) (Accreditation No. **AB 1552**) No. **LT/111/2018**.
 (8) Date of the certificate issue: **27.04.2018**



Z-ca Kierownika Jednostki
OPINIOWANIA, ATESTOWANIA
I CERTYFIKACJI WYROBÓW
TEST Sp. z o.o.
Ryszard Matuszowski

Siemianowice Śl., 27.04.2018

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Tel./Fax: +48 32 7308200, www.joac-test.pl



Jednostka Opiniująca,
Atestująca i Certyfikująca Wyroby
TEST Sp. z o.o.

(1) **CERTIFICATE
OF ENCLOSURE PROTECTION DEGREE
No. TEST/017/IP/2018**

- (2) Manufacturer: AIUT Sp. z o.o.
 (3) Address: **ul. Wyczółkowskiego 113, 44-100 Gliwice**
 (4) Device: **APULSE X375 Wireless Radio Gas Meter Data Logger**
 (5) Tested degree of enclosure protection: **IP65**
 (6) Jednostka Opiniująca, Atestująca i Certyfikująca Wyroby TEST Sp. z o.o. ("TEST" Product Assessment, Approval and Certification Body Ltd.), on the basis of tests carried out according to standard PN-EN 60529:2003, certifies that the enclosure of the device listed in paragraph (4) ensures a degree of protection listed in paragraph (5).
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