

ADGT GSM/NB-IoT DTU4x0 Data Logger Series



Data Logger Series
for Remote Metering
and Monitoring
Applications



PRODUCT OVERVIEW

Battery-powered 11-channel mobile data loggers designed for automated consumption data acquisition in utility industries. Come with seven counting pulse inputs, four configurable GPIOs, dual SIM card slots, RS-232 and RS-485 ports as well as several outputs for powering external devices.

Depending on the model, device can receive power either from 7-30V DC or 100-240V AC network as well as from a built-in backup battery (13 Ah, 19 Ah or 3.5 Ah), which will ensure autonomous data logger operation up to 8 years and above.

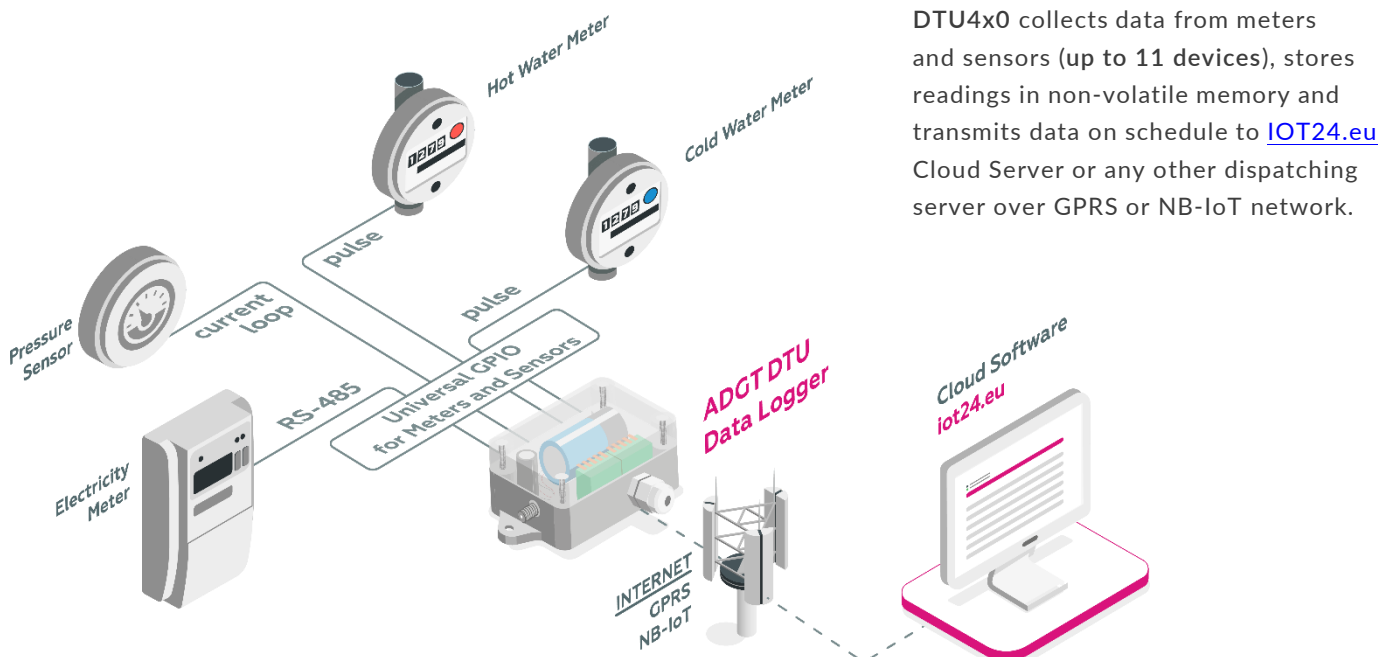
Due to the sealed IP65 case, **DTU4x0** data loggers are suitable for use in harsh, wet and dusty conditions.

Application Areas:

- Smart AMR/AMI Metering Systems for water, heat, electricity, gas)
- Automated Control Systems (temperature, leakage, pressure, 1-Wire, current loop)
- Power and Energy Industry



DTU DATA LOGGER CONNECTION SCHEME



DTU4x0 collects data from meters and sensors (up to 11 devices), stores readings in non-volatile memory and transmits data on schedule to IOT24.eu Cloud Server or any other dispatching server over GPRS or NB-IoT network.

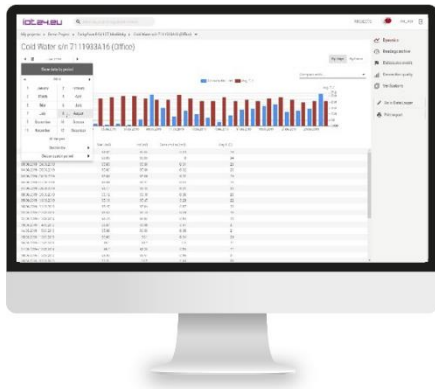
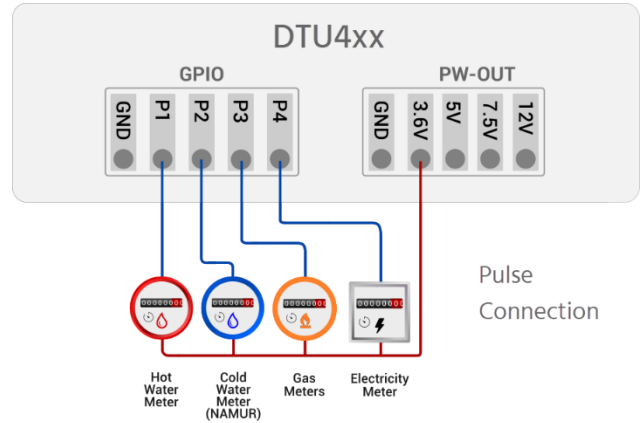
DTU KEY FEATURES

AUTOMATED DATA COLLECTION

from a wide range of devices:

- Meters with pulse output, including NAMUR and high-frequency electricity meters (up to 5kHz).
- Sensors: resistive, 4-20mA current loop, 1-wire.
- Meters and PLCs with RS-232/RS-485 port.

All inputs are software configurable and support polling frequency 2Hz/20Hz/100Hz to provide accurate measurements.



DATA TRANSFER TO [IOT24.EU](https://www.iot24.eu) CLOUD SOFTWARE

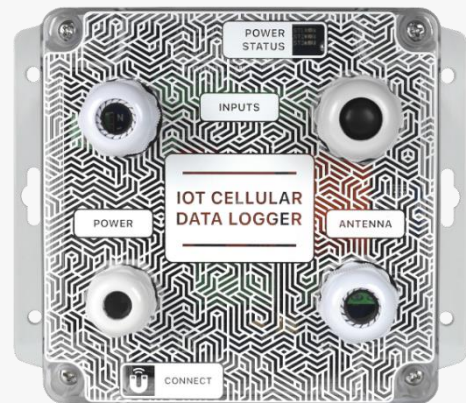
- Instant 24/7 access to current readings, statistics and telemetry data via web interface.
- Ability to visualize and analyze data using convenient graphs.
- Export data to .xlsx format.
- Remote update of data logger settings and firmware.

GPRS OR NB-IOT NETWORK

GPRS - a time-tested reliable standard providing wide coverage area.

NB-IoT – a rapidly developing communication technology developed specifically for IoT systems. NB-IoT data loggers are characterized by ultra-low power consumption, provide a transmission rate of **up to 150 kbps** and can operate from a single battery for **up to 8 years** and above*.

* depending on the number of connections and the amount of data transmitted.

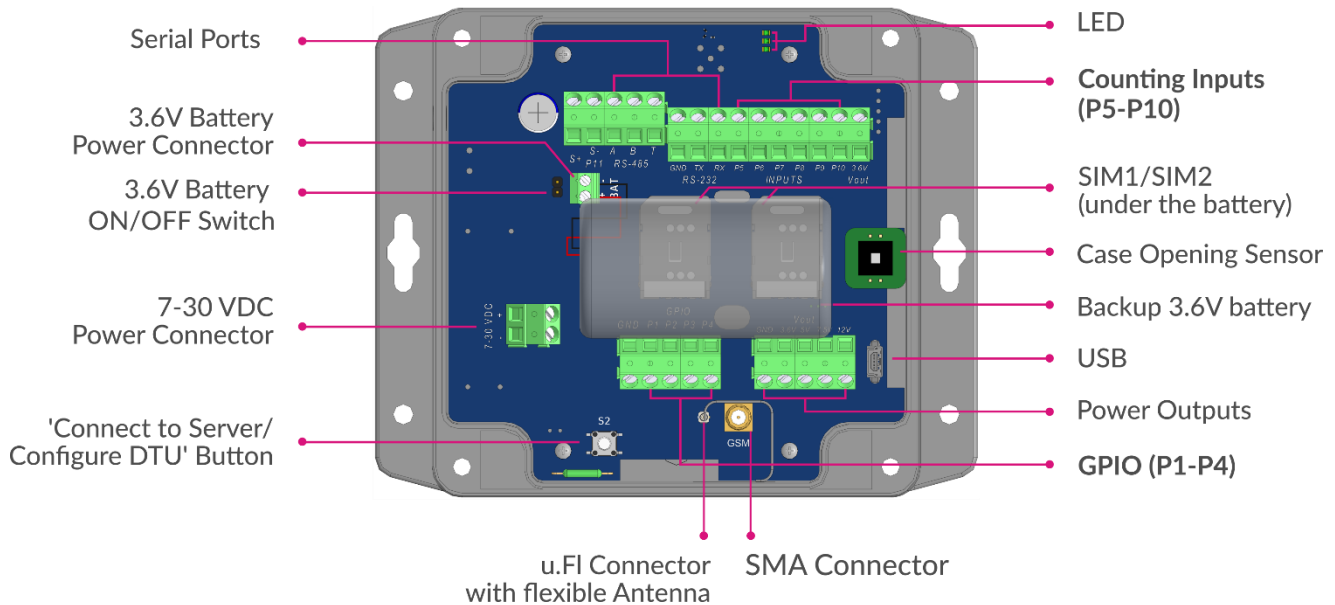


RELIABILITY OPTIONS:

- Data storage in non-volatile memory (up to 90 000 entries from 10 meters).
- 2 x 2FF SIM card slots, providing cellular channel reservation and reliable data transfer.
- Power supply: 230 VAC or 7-30 VDC power supply as well as autonomously, from internal replaceable battery (13 Ah, 19 Ah or 3.5 Ah).
- Enclosure: plastic IP65 class moisture-proof case for premises with the increased humidity and dust level.

ORDERING INFORMATION (BASE MODELS)

BASE MODEL	NETWORK	PROTOCOL	POWER SUPPLY	ANTENNA/ANTENNA CONNECTOR
DTU410	GPRS	TCP	7-30 VDC + 13 Ah battery	Internal antenna 2-5.2dBi + SMA connector
DTU420	NB-IoT	TCP	7-30 VDC + 13 Ah battery	Internal antenna 2-5.2dBi + SMA connector



THE MODEL CODE

DTU4x0 base models can be supplied with the set of options:

- Hardware Options** - minor hardware changes in the device:
 - C - a built-in 100-240 VAC power supply unit
 - G - RS-485 galvanic isolation
- Assembly Options** - indicate a replacement or absence of battery, antenna or case:
 - .A - A-type ER18505M 3.5Ah battery
 - .S - D-type ER34615H/SLC1025 19Ah battery
 - .Z - no battery
 - .F - no antenna
 - .M - no case

Options are added to the name of the base model in the following sequence:

Base Model	- <i>hyphen</i>	Hardware options	. <i>dot</i>	Assembly options (battery, antenna, case)
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Within each group of options, the letters go alphabetically. If the letters of the option group are not present in the model name, then the next option group takes its place. If no option is specified, we have the base model (see "Ordering Information").

Base Model Options

DTU410-CG.S

Assembly Options (after 'dot'):

- 'no letter' - D-type 13Ah battery
 - A - A-type 3.5Ah battery
 - S - D-type 19Ah battery with supercapacitor
 - Z - no backup power battery
-
- F - no internal antenna, u.FL and SMA-f connectors on board
-
- M - no case (incompatible with the option 'C')

Hardware Options (after 'hyphen'):

- 'no letter' - 7-30 VDC power supply
- C - 100-240 VAC power supply
- G - RS-485 galvanic isolation

Antenna / Antenna Connector Type:

- 0 - internal 2-5,2dB flexible antenna + SMA-f

Network Type:

- 1 - GPRS
- 2 - NB-IoT

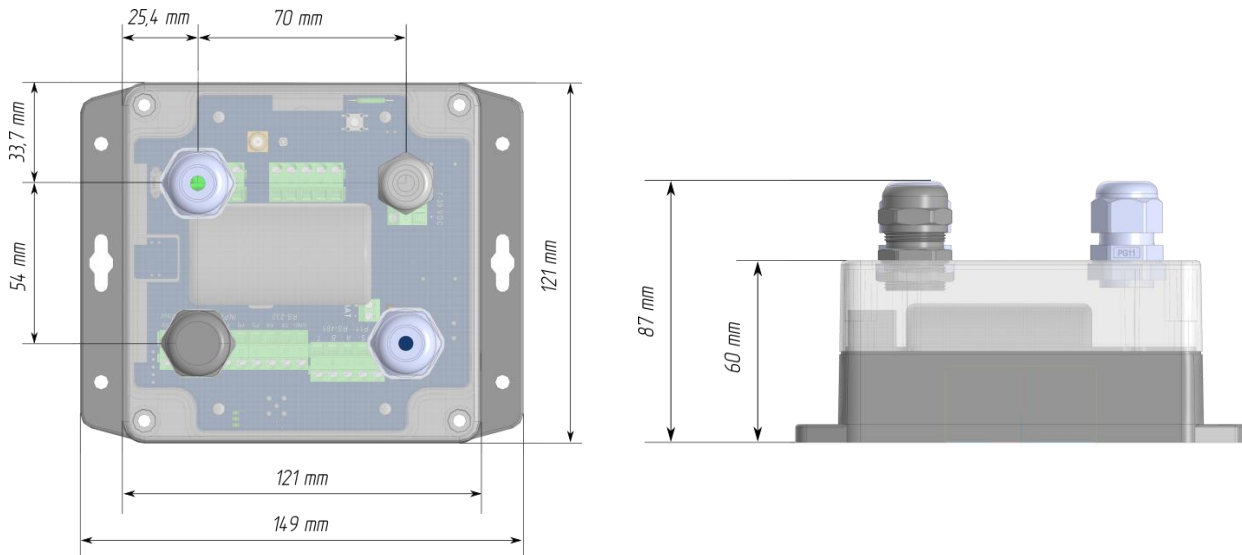
Enclosure Type:

- 4 - plastic IP65 case (149 x 121 x 87 mm)

Example:

- DTU410-CG.S - 100-240 VAC power supply, RS-485 isolated, D-type 19Ah backup battery
- DTU420.ZF - 7-30 VDC power supply, RS-485 non-isolated, no antenna, no backup battery

DIMENSIONS



SPECIFICATIONS

	DTU410, DTU420	DTU410-C, DTU420-C
NETWORK PARAMETERS		
GSM (DTU410)	GSM/GPRS 850/900/1800/1900. GPRS class 8/10/auto (up to 12. Rate (DL/UL): 85,6 kbps	
LTE NB-IoT (DTU420)	NB-IoT B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/B25/B26/B28/B66/B70/B71. Rate (DL/UL): 100 kbps/150 kbps	
IO PARAMETERS		
GPIO	x4 (P1-P4): operating modes - pulse counter; high-frequency (HF) pulse counter (up to 5kHz); two-state input; leakage sensor; opening sensor, engine hours counter; 1-Wire; current loop sensor; temperature sensor	
Counting inputs	x6 (P5-P10): operating modes - pulse/HF pulse counter; two-state input; leakage sensor, temperature sensor x1 (P11): type - pulse counter, leakage sensor (S+, S- signals)	
Pulse input polling frequency	2Hz: pulse duration - more than 500 ms, pulse frequency at the input - less than 1 Hz 20Hz (default): pulse duration - more than 50 ms, pulse frequency at the input - less than 10 Hz 100Hz: pulse duration - more than 10 ms, pulse frequency at the input - less than 50 Hz	
Input conditions	closed, open, short circuit, break	
Input resistance range	0 - 100 kOhm	
Relative error of pulse counting	±0,01%	
4-20 mA current loop mode	Accuracy: 2% (t=22°C), max - 5% (in the operating temperature range). Warm-up time - 60 sec	
OTHER PORTS		
Power output	3.6V (x2), 5V, 7.5V, 12V	
Serial ports	1 x RS-232 (Tx, Rx, GND signals), 1 x RS-485 (A+, B- signals)	
SIM	2 x mini-SIM (2FF)	
USB	1 x mini-USB B	
Antenna/Connector	DTU4x0: Internal 2-5.2dB flexible antenna + SMA(f) connector; DTU4x0.F: u.FI + SMA(f) connectors	
POWER SUPPLY		
Main power supply source	7-30 VDC Max power consumption: 5W (GSM), 1W (NB-IoT)	100-240 VAC 50Hz Max power consumption: 5W (GSM), 1W (NB-IoT)
Backup power supply source	LiSOCL2 3.6V battery: D-type ER34615M 13Ah; D-type ER34615H/SLC1025 19Ah; A-type ER18505M 3.5Ah	
MECHANICAL & ENVIRONMENTAL		
Enclosure type	plastic, IP67	
Dimensions (L x W x H)	149 x 121 x 87 mm	
Weight	not more than 525 gr	
Operating temperature	-20...+50° C (when operating at temperature below 0°C, the battery life may be shortened)	
Warranty	2 years	

