DIINNO

DTZ541

Three-phase meter, three-point mounting – modern metering device (mME), MID class A



The DTZ541 is a three-phase meter for three-point mounting according to DIN 43857 Part 2 and a modern metering device (mME) within the meaning of the German Metering Point Operation Act (MsbG). It measures active energy in both directions and provides the values relevant to legal metrology via the optical INFO interface and the two-line LC display. It is connected to a Smart Meter Gateway via the MSB interface in combination with the BAB-01 communication adapter, which provides the LMN interface.

3 × 230/400 V
Three-phase four-wire, 50 Hz

0.25–5 (100) A
Imin–Ib (Imax), also 60 A

Class A
MID, EN 50470-1/-3

IP51
Degree of protection, M1 / E2

Type code

Position	Characteristic	Value
DTZ541	Design	Three-phase meter, three-point mounting according to DIN 43857-2
2nd position	Energy direction	B: consumption meter with backstop · L: feed-in meter with backstop · Z: bidirectional meter · S: feed-in meter, net metering without backstop
3rd position	Tariff	E: single tariff · D: dual tariff
4th position	MSB interface	B: RS485 · C: RS232
5th position	Accuracy / option	A: class A · B: class B · L: with LoRaWAN interface

Example: DTZ541-ZDBA = bidirectional meter, dual tariff, RS485 MSB interface, class A.

Ordering information

Type	Energy direction	Tariff (factory setting)	Registers
DTZ541-BEBA	Consumption (+A), backstop	Single tariff	1.8.0
DTZ541-BDBA	Consumption (+A), backstop	Dual tariff	1.8.0, 1.8.1, 1.8.2
DTZ541-LEBA	Feed-in (−A), backstop	Single tariff	2.8.0
DTZ541-SEBA	Feed-in (−A), net metering	Single tariff	2.8.0
DTZ541-ZEBA	Bidirectional (+A / −A)	Single tariff	1.8.0, 2.8.0
DTZ541-ZDBA	Bidirectional (+A / −A)	Dual tariff	1.8.0, 1.8.1, 1.8.2, 2.8.0

Options: current range 0.25–5 (60) A or 0.25–5 (100) A · RS232 MSB interface (4th position C, also connectable via BAB-01) · LoRaWAN interface (5th position L) and class B on request. The energy direction is permanently configured at the factory. The dual tariff is switched via terminals 13 and 15 or by LMN command. Packaging unit: on request.

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Technical data

Electrical and metrological data

Connection type	Three-phase four-wire (3p4w) · single-phase (1p2w)
Nominal voltage	3 × 230/400 V · 1 × 230 V (on L1, L2, L3)
Frequency	50 Hz
Current Imin–Ib (Imax)	0.25–5 (100) A or 0.25–5 (60) A, direct connection
Starting current	0.004 × Ib = 0.02 A
Transitional current (Itr)	10 % × Ib = 0.5 A
Measuring accuracy	Class A (EN 50470-1/-3) or class 2.0 (IEC 62053-21)
Impulse withstand voltage	6 kV (IEC 62052-11)
Short-circuit withstand	30 × Imax (IEC 62053-21)
Power consumption	Current path < 0.2 VA · voltage path < 0.5 W
LED pulse output	500, 5,000 or 10,000 imp/kWh (infrared, test LED)
Tariff control	External via terminals 13 and 15 or by LMN command via BAB-01 (dual tariff)
Mechanical environmental conditions	M1

Display and operation

LC display	Two-line · viewing angle 15° (above), 60° (left, right, below)
Digit size	Value field min. 3.5 × 8 mm · code field min. 1.9 × 4.2 mm
Registers +A	Single tariff 1.8.0 · dual tariff 1.8.1 / 1.8.2
Registers −A	2.8.0 · dual tariff optionally 2.8.1 / 2.8.2

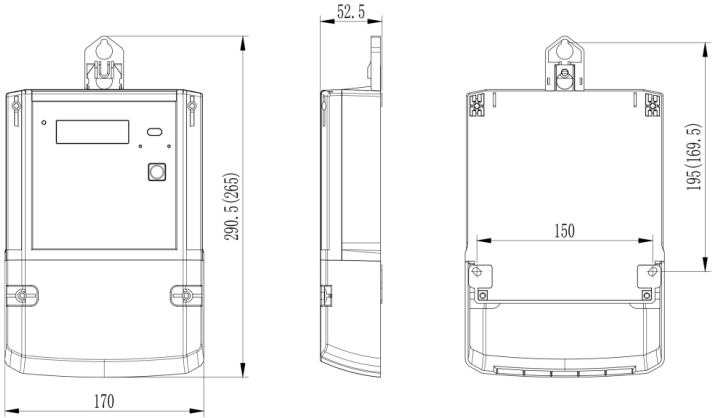
Environmental conditions and mechanics

Temperature range	−25 °C … +55 °C (operation) · −40 °C … +70 °C (storage)
Relative humidity	95 % non-condensing, < 75 % annual average (IEC 62052-11, EN 50470-1, IEC 60068-2-30)
Electromagnetic environmental conditions	E2
Degree of protection	IP51
Housing material	Glass-fibre reinforced polycarbonate
Terminal block	DIN 43857 Part 2 · terminals Ø 9.5 mm / 6.5 mm
Dimensions (L × W × H)	290.5 × 170 × 52.5 mm
Weight	Approx. 720 g
User seal	Two sealing points
Service life	20 years

Interfaces

INFO (customer interface)	Optical according to IEC 62056-21, unidirectional
INFO protocol	SML according to FNN specification EDL 1.04, push mode
MSB interface	RS485 (type B) or RS232 (type C) for the metering point operator
LMN interface	Via the BAB-01 communication adapter on the MSB interface RS485 (type B) or RS232 (type C) – connection to the Smart Meter Gateway
LMN protocol	According to BSI TR-03109, PTB-A 50.8, FNN specification
Tariff input	Terminals 13 and 15 or LMN command via BAB-01 (dual tariff; LMN takes priority)

Dimensional drawing



Dimensions in mm. Three-point mounting according to DIN 43857-2; mounting dimensions 150 × 195 (169.5) mm.

Standards & conformity

Measuring Instruments Directive (MID)	Directive 2014/32/EU
EU type-examination certificate (module B)	0598-MID-B-25-018 · notified body 0598 · valid until 01.02.2028
Conformity assessment (module D)	0598-MID-D-22-066 · notified body 0598 · valid until 23.12.2028
EMC Directive	2014/30/EU
Metrological standards	EN 50470-1, EN 50470-3, IEC 62052-11, IEC 62053-21
Design & connection	DIN 43857-2
Test standards	IEC 60068-2-30
Data interfaces	IEC 62056-21, SML 1.04, BSI TR-03109, PTB-A 50.8
Legal metrology	Only the approved meter types with their respectively released software versions comply with legal metrology

CE · MID 2014/32/EU · class A · EMC 2014/30/EU · DE-M

The EU declaration of conformity is available as a separate document. Manufacturer: Holley Technology Ltd., Hangzhou/China. Importer and distribution in Germany: DIINNO GmbH, Berlin.

Accessories

BAB-01	Communication adapter for secure connection to the Smart Meter Gateway according to BSI TR-03109
Terminal cover	Transparent terminal cover with integrated BAB-01, supplied as a set

Disposal

In accordance with Directive 2012/19/EU (WEEE), the meter and its electronic accessories must not be disposed of with household waste at the end of their service life. The devices must be collected separately and recycled in an environmentally sound manner.