Electricity meter DZG WS76

Installation guide. Based on DZG Metering GmbH “WS76 Handbuch”, revision 14.07.2025. Covers installation, tariff control, the front panel and plug-in modules.

General

Direct-connected, single-phase two-wire meter for active energy. The rated current, energy direction and tariff option depend on the ordered variant; check the nameplate.

Only registers displayed in the upper LCD line are approved for billing. The INFO line and other values serve as additional information.

Type designation

Code	Meaning
WS76	Single-phase static meter, series 76
06 / 12	Current range 10/60 A or 5/60 A
.1 / 2 / 3 / 4	+A with backstop · +A/-A bidirectional · -A with backstop · -A without backstop (net)
T / V / E	Dual tariff: all directions / import (+A) only / export (-A) only

Backstop (German Rücklaufsperre): energy flowing in the opposite direction does not reduce the register reading.

Technical data

Nominal voltage Un	230 V AC (0.8-1.15 Un)
Frequency	50 Hz (±2 %)
Iref / Imax	5 A or 10 A / 60 A
Accuracy class	A or B (MID)
Energy directions	+A (import), -A (export)
Tariffs	T1, T2 (controlled via terminals 13/15)
Test output LED (IR)	10 000 imp/kWh
Power consumption	voltage circuit < 0.9 W, current circuit < 0.05 VA
Operating temperature	-40 … +70 °C
Protective class / degree of protection	II / IP51 (installed in an IP51 enclosure)
Utilisation / overvoltage category	UC1 / OVC III (4 kV)
Dimensions (H × W × D), weight	approx. 213.8 × 130 × 68 mm (DIN 43857), approx. 1 kg
Interfaces	Optical IR interface, plug-in module slot

Safety before installation

DANGER! Incorrect handling of live parts can cause serious or fatal injury, even at 230 V. During installation and removal, all conductors connected to the meter must be disconnected from the mains and secured against unintentional reconnection.

- Installation, commissioning and removal may only be carried out by a qualified electrician who has read this guide.
- Follow local occupational safety and electrical safety regulations as well as the requirements of the distribution system operator.
- The meter is intended for indoor use or installation in a meter cabinet. In hot climates the housing surface can become hot and there is a risk of burns.
- A circuit breaker must be installed upstream of the meter. Its rated current and characteristics must be coordinated with the meter’s nameplate Imax and utilisation category (UC1).
- Check on the nameplate that the mains voltage matches the meter voltage and that the load current does not exceed Imax. Select the conductor cross-section according to the maximum load.
- Do not open the meter. Opening it voids the warranty. Clean with a dry cloth only.

1. Mechanical installation

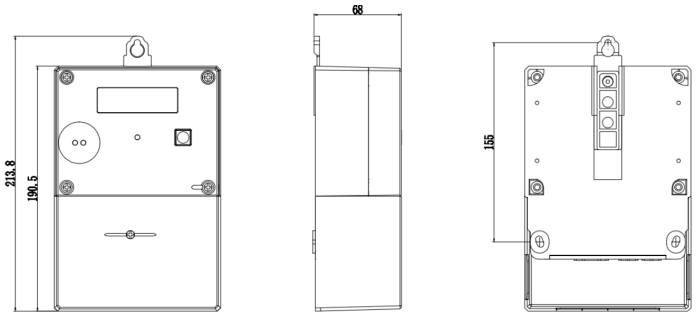


Figure 1. WS76 housing dimensions and fixing points (mm).
Source: DZG WS76 Handbuch, 14.07.2025 (installation: pp. 13-17; operation: pp. 21-34).

- Use the top suspension eye and two lower fixing points for three-point mounting.
- Mount with the terminal block at the bottom.
- Refer to the housing drawing for fixing geometry and allow conductor bending space.

2. Electrical connection

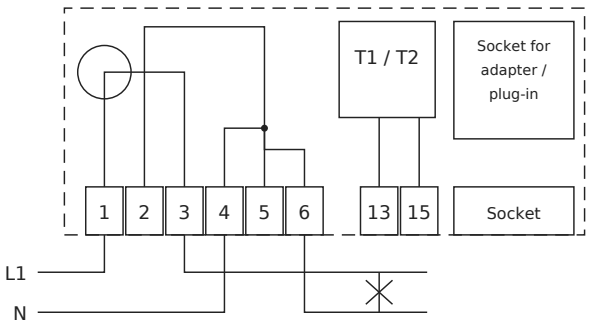


Figure 2. Single-phase direct connection.

1. Isolate the supply, verify absence of voltage and secure against reconnection.
2. Remove the terminal cover.
3. Connect L to terminal 1 (in) and 3 (out); connect N to 4 (in) and 6 (out).
4. Tighten each connection to the correct torque for the conductor and load.
5. If required, connect tariff control to 13/15.

Follow the connection diagram on the meter. The diagram above illustrates the WS76 arrangement; confirm the actual device variant before wiring.

Terminal function	No.	Bore	Conductor	Screw	Torque
Phase in / out	1 / 3	6.5 mm	1.5-25 mm²	M6, PZ2	>3.0 and <6.0 Nm
Neutral in / out	4 / 6	6.5 mm	1.5-25 mm²	M6, PZ2	>3.0 and <6.0 Nm
Auxiliary phase / neutral	2 / 5	2.7 mm	0.75-2.5 mm²	M3	0.5-0.6 Nm
Tariff signal / signal N	13 / 15	2.7 mm	0.75-2.5 mm²	M3	0.5-0.6 Nm

Caution: Auxiliary terminals 2/5 have no internal fuse. Maximum output current is 0.5 A; fit separate protection for connected equipment. Supply auxiliary equipment only from the unmetered side. Never exceed the permitted tightening torque.

Note: the manual’s terminal table lists neutral 4/5; its diagram shows 4/6. Follow the diagram on the actual meter.

3. Connecting a tariff time switch (T1/T2)

On a factory-configured T, V or E variant, apply a switched 230 V AC signal to terminal 13 and connect the control neutral to 15. Use an external time switch with suitable ratings and its own protected supply.

Mode	Terminal 13	Terminal 15	Active tariff
Normal	0 V	0 V	T1
Normal	230 V AC	0 V	T2
Inverted	0 V	0 V	T2
Inverted	230 V AC	0 V	T1

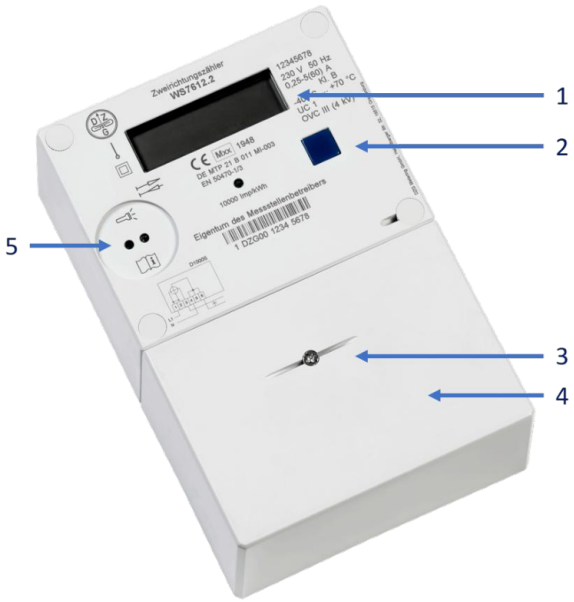
Activating and checking the tariff function

Apply the control signal to 13/15 for at least 15 s to activate a prepared tariff function. Activation survives a restart. The active tariff OBIS code is underlined; tariff displays use 1.8.1/1.8.2 and, for export variants, 2.8.1/2.8.2. LMN commands have priority over terminal control; fitting an LMN module disables active tariff functionality, including after removal. Recheck configuration after module changes.

Bidirectional variants: T → 1.8.1/1.8.2/2.8.1/2.8.2; V → 1.8.1/1.8.2/2.8.0; E → 1.8.0/2.8.1/2.8.2.

Source: DZG WS76 Handbuch, 14.07.2025 (installation: pp. 13-17; operation: pp. 21-34).

4. Front panel



No.	Element	Function
1	LCD	Readings, OBIS codes and status symbols (Figure 4)
2	Blue push-button	Short press: next value or menu item. Long press (≥ 5 s): confirm, toggle on/off, reset or open historical values.
3	Cover screw	Sealable terminal-cover fixing screw
4	Terminal cover	Covers terminals and plug-in slot
5	Optical interface / light sensor	Data output to an IR reading head. Short / long (≥ 5 s) light signals act as button presses; sensor active depending on variant.

Figure 3. WS76 front panel.

LCD

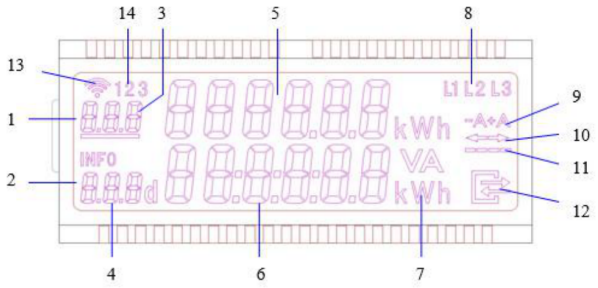


Figure 4. LCD elements (WS76 uses L1).

No.	Meaning
1	Top line: billing register reading with OBIS code
2	Second line (INFO): non-billing information, e.g. instantaneous power
3	OBIS code (e.g. 1.8.1). The active tariff code is underlined.
4	INFO: PIn, P, E, HIS, InF, 1d / 7d / 30d / 365d
5	Register: 6 digits with leading zeros, no decimals
6	Consumption: 6 digits, 1 decimal place
7	Unit: kWh, W, Wh, V, A
8	L1: phase voltage present
9 / 10	-A / +A: energy direction; → import, ← export
11	Power bar: advances with each test LED pulse; hidden at rest
12 / 14	Communication status / 1 = LMN, 2 = LoRa module (3 reserved)

In the normal (scrolling) display, the billing registers in the top line change every 10 s. In the event of a fatal error, F.F FFFFFF is shown for 2 s between values; in that case contact your supplier.

5. Commissioning and sealing

1. Switch on the voltage. The meter runs a display test (all segments 3× on both lines). It then shows firmware (OBIS 0.2.0) and checksum (C.90.2).
2. Check that the L1 symbol is lit (phase voltage present).
3. Under load, check the direction arrow (→ import +A) and power bar. The IR test LED pulses (10 000 imp/kWh); with no load it is lit continuously.
4. Check that the tariff registers change over when the time switch operates.
5. Fit the terminal cover and seal its fixing screw.



Figure 5. Utility seal on terminal cover.

Preserve all four factory housing seals.

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6. Button-operated menu

From the normal display, a short press (or a short light signal) starts the display test and opens the menu. A short press moves to the next item; a long press (≥ 5 s) performs the action. After about 2 minutes without operation, the normal display returns.

Second line	Meaning	Long press (≥ 5 s)
PIn 0000	Entry of the 4-digit PIN (if PIN protection is on). Select each digit with short presses (0→1→…→9), then wait 3 s. After the 4th digit, wait another 3 s.	—
P	Instantaneous active power (W)	—
E	Consumption since last reset	E CLr: reset (confirm with a second long press)
1d / 7d / 30d / 365d	Consumption over the last day / 7 days / 30 days / 365 days. Up to 730 daily, 104 weekly, 24 monthly and 2 yearly values are stored.	Opens previous values (-1, -2, …). Browse with short presses; return with a long press.
HIS CLr	Clear historical values	Clear (confirm with HIS CLr on)
InF on / OFF	IR interface data set: full (with decimals and power) or reduced	Toggles on ↔ OFF. Full data also requires PIn OFF.
PIn on / OFF	PIN protection. When OFF, instantaneous power is shown permanently in the second line.	Toggles on ↔ OFF

7. Interfaces and plug-in modules



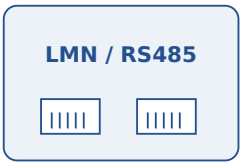
Figure 6. Optical interface (front) and plug-in slot (under cover).

Built-in interfaces

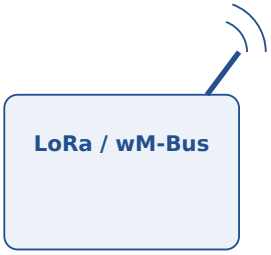
• **Optical IR interface (DIN EN 62056-21):** one-way SML 1.05 data output every 1 s, 9600 Bd (8N1). Read with an optical reading head.

Plug-in module slot: on the terminal block, under the cover; 4-pin serial TTL socket (Rx / Tx). Only manufacturer-approved modules may be used. Internal module supply (DC-DC converter) is fitted. An LMN module is powered by the connected Smart Meter Gateway.

Available plug-in modules



Wired modules
LMN (RS485): connection to a Smart Meter Gateway.
RS485 module: bus connection via two RJ12 sockets, depending on the approved module.



Radio modules (with antenna)
LoRaWAN: European band 863-870 MHz.
Wireless M-Bus: remote reading, depending on the installed plug-in.

For module availability, order codes and prices, contact OÜ Pistrik I-V: sales@pistrik.ee.

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