



DTSD545 Three Phase 160A Smart Meter

Technical datasheet — three phase four wire direct-connected DLMS/COSEM smart meter with relay, GPRS and RS-485 communication, TOU, daily & monthly billing, load profile, event recording and load control. Summarised from the Holley Technology Ltd. technical manual.

Basic parameters

Meter type	Three phase four wire (direct type)
Active class	Class 1 (IEC 62053-21); measuring accuracy active 0.5, reactive 1.0
Reactive class	Class 2.0 (IEC 62053-23)
Rated voltage	3 x 230/400 V; working range 0.6 Un – 1.3 Un
Rated frequency	50 Hz ± 2 %
Current	10(160) A; operates correctly up to at least 180 A
Starting current	0.002 Ib
Pulse constant	Active 1000 imp/kWh; reactive 1000 imp/kvarh
Power consumption	Current circuit < 0.5 VA; voltage circuit < 2.0 W / < 10 VA (without modules)
Operating temperature	-25 °C to +70 °C rated; -40 °C to +70 °C extreme
Protection / insulation	Indoor IP54; insulation class II; polycarbonate case; brass BS-standard terminals
Clock	≤ 0.5 s/day at 23 °C; leap year automatic; sync from master station or optical port
Battery	Internal + replaceable external battery, 10-year life, 3 years backup through power failure
Dimensions / weight	290 x 170 x 85 mm; approx. 2.35 kg; mounting holes 150 mm wide, 197 (214) (230) mm
Seals	Module box, meter cover and terminal cover lead seals (2 each); programming key seal; shear-off cover screws
Firmware	Local and remote upgrade

Communication

Ports	Optical port 1200–9600 bps; GPRS module 9600 bps; RS-485 (RJ45) 1200–9600 bps
Protocols	Optical: IEC 62056-21 mode E; GPRS: DLMS over TCP/IP; meter: DLMS/COSEM (HDLC, IEC 62056-42/46/53/61)
Security	DLMS security suite 0
Data push	Configurable push to master station: on connectivity, interval 1–3, on alarm, on power down, consumer information, on installation (0-x:25.9.0.255)

Measurement

Energy registers	Absolute (15.8.0), import (1.8.0), export (2.8.0) active; import/export reactive (3.8.0/4.8.0); reactive Q1–Q4 (5.8.0–8.8.0); import/export apparent (9.8.0/10.8.0) — total plus up to 8 tariff rates
Instantaneous	Voltage, current, power factor per phase; active/reactive/apparent import & export power; frequency; voltage and current harmonics (THD) per phase; phase angles
Demand	Current and maximum demand for active, reactive and apparent import/export; period 300/600/900 (default)/1200/1800/3600 s; interval or sliding window (1–15 slips); clearing by button, command or monthly billing

Tariff, billing and load profile

TOU	Up to 8 tariff rates, 12 daily time spans, 10 day tables, 12 week tables, 10 season tables, 100 special days; active and passive tariff tables with immediate or scheduled switch
Monthly billing	Last 14 monthly settlements; automatic (settlement day 1st–28th, 00:00–23:00), by command, on tariff-table switch, on mode switch, or by key
Daily billing	Last 93 daily freezes at 00:00: energy registers, daily consumption, credit consumption, remaining balance
Load profile	Energy load profile and instantaneous load profile; 1/5/10/15/30/60 min cycle; at least 4 months at 15 min (11,520 entries) with 15 capture objects each

Events and tamper detection

Event logs	Standard (100), fraud (100), disconnecter control (30), communication (255) and power quality (100) event logs, FIFO, selective access by range and entry
Tamper events	Terminal, meter and modem cover open; meter box open; strong DC magnetic field; current reversal; bypass start/end; module removed; authentication, decryption and replay-attack failures
Power quality	Under/over voltage and missing voltage per phase, phase asymmetry, voltage recovery
Indication	Red alarm LED and LCD tamper symbol while a tamper condition is active; 6 historical tamper indicators on the LCD

Relay and load control

Disconnecter	Internal relay with DLMS control modes 0–6 (default 4): remote, manual and local disconnect/reconnect per the DLMS state model; reconnection after a local disconnect requires manual intervention
Limiter	Contract-load limiter on power or current with settable threshold, trip delay (default 60 s), auto-reclose delay (default 180 s), reclose count limit and emergency-period threshold
Event trips	Configurable relay opening on overload/overcurrent, over/under voltage (1–3600 s delay), cover/box opening, modem cover, current reverse and strong magnetic field; cover/magnetic trips need a utility clearing token
Reason codes	Display item C.3.5 / short code 806: 00 close, 01 overload, 03 terminal cover, 05 communication, 08 overvoltage, 09 undervoltage, 10 magnetic, 11 meter cover, 13 current reverse, 25 modem cover, 28 meter box

Display

LCD	8-digit main value, 6-digit OBIS area, tariff T1–T8, quadrant, relay, battery, GPRS signal, communication and tamper indicators; antiglare, non-blinking; backlight on key press
Display lists	Auto-scroll, key-press and service lists of up to 64 configurable items; 1–99 s per item; power-off wake-up display for 30 s
LEDs	Active pulse (green), alarm (red), power status, reactive pulse

Terminals and wiring

Main terminals	1/3, 4/6, 7/9 phase A/B/C current in/out; 1, 4, 7 phase voltage; 10, 12 neutral; Ø11 mm holes, 16 mm pitch, two clamping screws per terminal (BS 5685-1)
Auxiliary	22/23/24 external auxiliary relay (COM/ON/OFF); 26/27 meter door contact; 30/31 pulse output (configurable measurand, 80 ± 20 ms, ≥ 50 VA, 110 V DC / 230 V AC, $\geq 10^9$ operations, 2 kV isolation); RJ45 RS-485 (pins 4/5 A/B, 1 +12 V, 8 GND)

Standards

IEC 62052-11, IEC 62053-21/23/24, IEC 62056-21/42/46/53/61, IEC 62055-31/41 (STS), SANS 62052-31 terminal covers, BS 5685-1 terminals; pulse vibration per IEC 62052-11 5.2.2.

Supplied in South Africa by UtilityPal (Pty) Ltd — www.utilitypal.co.za — 021 001 4653. Manufacturer: Holley Technology Ltd., Hangzhou, China. Specifications per manufacturer technical manual (2026 edition); subject to change without notice.