



DIWICON-E DW 259 E

INDUSTRIAL GPRS - BASED DATA ACQUISITION DEVICE

DW 259 E is a GPRS-based data acquisition device to remotely collect data from metering devices, keeping both installation and operational costs at low levels.

FEATURES

- On-line connection between the meters and the central system
- Industrial design
- Transparent communication over GSM/GPRS
- Poll or push mode
- RS485 connectivity for metering devices
- Central time synchronization via GPRS

SPECIAL CHARACTERISTICS

- Isolated RS 485 port
- Fully transparent or automatic mode
- Alive mechanism
- Acknowledged communication
- Diagnostic function
- Watchdog
- Complete remote management over GSM/GPRS
- Remote firmware upgrade over GSM/GPRS
- Dynamic IP addressing

INDUSTRIAL DESIGN

- Functional GPRS temperature range:
- 20 °C to + 85 °C
- Tropical protective coating
- Can be placed and sealed with the meter
- Simplified service interface (status LED)

APPLICATION

DW 259 E is an always-on transparent communication module which keeps their GPRS channel alive. It has an RS485 serial interface, should be connected to one or more (max. 10) metering devices.



TECHNICAL DATA

GSM communication:	Single SIM Card (GPRS)
Field protocols applied:	IEC 62056-21 (DLMS/COSEM) optional MODBUS
Internal memory:	2 KB RAM, 32 KB Flash
GPRS-based time synchronization:	< 100 ms precision

External Connections

Power:	Lengthened cable
Serial connection:	Lengthened cable
GSM:	Internal antenna (PCB)

Status LED:

Different colors and signals for different information	Variation of Red/Green colors and blinking signal
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Power supply :	48 V to 265 VAC or 68 V to 375 VDC
Power consumption:	250 mW (average)
Operational temperature:	- 20 °C to + 70 °C
Storage temperature:	- 40 °C to + 85 °C
Humidity:	5 - 95% (non-condensing)
Vibration:	2.1 g, 15 - 150 Hz ± 2.5 mm deviation
Dimensions (L x W x H):	145 x 60 x 40 mm
Radio Frequency Data	Dual band GSM/GPRS device, EGSM 900/1800 MHz 3GPP GSM Phase +2standard

OPERATIONAL DESCRIPTION

POLLING MODE

The data acquisition process is initiated by the central (SCADA or MDM) system. This means that the queries sent by the central application are transmitted to the metering devices then the answers are sent back transparently to the center. In this case the communication process does not require local data storage or data evaluation.

PUSH MODE

In push mode the data acquisition process is initiated by the DW 259 E field device. The cycle time of the initiated data queries can be configured from the central system. The answers from the meters are transparently sent to the center. This operational mode can be really efficient in case of mass data collection.

The data acquisition device is initialized by the central server application "teaching" it what set of data should request from the meter at what intervals of time.

After initialization the device will automatically collect and transmit the predefined set of data to the central server over GPRS.

Data acquisition initialization and the setup of communication parameters can be done over GPRS and SMS as well.

The advantages of the push mode are:

- All field devices can send the data at the same time (i.e.: every 15 minutes).
- The communication expenses and the required bandwidth are reduced to half
- Push method has no cycle time like simple polling. Polling tens of thousands of devices can take several hours. By using push mode 30.000 DW 259 E devices will report all data in less than 5 minutes.
- The DW 259 E devices can be reinitialized any time for a different set of data with different acquisition schedule.

- Exceptional data requests or meter setup commands can be performed any time, the device behaving transparently.

DATA FORMAT

The device supports data format in accordance with IEC 62056-21 (former IEC 1107) for readouts and configuration and readouts only in accordance with the standard for DLMS/COSEM.

The DW 259 E field device supports different DLMS based (electricity) metering devices and optionally can be used for MODBUS connection.

INSTALLATION

The DIWICON device can be directly connected to the RS485 serial communication port of the meter or meters connected on a chain.

The device has been optimized for DLMS meters.

ALIVE MESSAGES

The alive messages sent by the DIWICON field device on a timely basis assures the system level operability of the complete system and the early observation of malfunctions or network failures.

LIFE SPAN

Due to the optimized circuit design and the use of high quality components the life span of the device is more than 20 years.

MINIMUM MAINTENANCE REQUIRED

Due to industrial construction and the IP design the device requires minimum maintenance efforts.



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