# DL220

## Battery-operated data logger with integrated GSM/GPRS radio data modem


## Applications

The DL220 data logger allows automated data communication for stations without electrical or telephone connections

## Brief information

**Installation:** The installation of the data logger in the station is limited to connecting the impulse line of the transmitter unit (gas meter, volume corrector or other measuring instrument with a low-frequency pulse output). The reception field strength of the internal GSM/GPRS modem can be checked on the unit's display. Thus, commissioning is possible without any special tools.

**Operation:** The current values and parameters can be shown on the display and changed if required. The use of arrow keys guarantees simple operation of data arranged in lists. Each value is displayed with a clear description and the relevant unit.

**Archiving:** The meter readings are stored in an event-oriented manner. In this, the meter readings are archived with a time stamp during the given metering period and in the case of events (e.g. when a set limit value is exceeded). Each recorded meter reading and consumption value can be shown on the display of the data logger. Thus the data used for invoicing can be checked on site by the customer at any time and without additional resources.

**Data communication:** The provision of data communication for stations without electricity supplies or telephone connections is the main feature of the unit. The GSM/GPRS radio data modem needed for this is completely integrated in the unit.
Data transmission can be carried out in both PUSH and PULL mode. In PUSH mode, the modem sends data autonomously by text message or as an ASCII file using the FTP protocol (ComFTP application). Thus, the amount of data to be transferred, as well as the cycle can be freely configured. For this purpose, the modem is activated and is then switched off after the data has been transferred.
For PULL mode, in order to optimize the service life of the battery, the modem is activated within a programmable, cyclical time window for calling up the data.
If the data logger is used without a modem (optional), then the optical interface is used for reading out the archived data.

**Parameterisation:** The program WinPADS is available with its associated connection cable for easy parameterisation and reading out.

**Power supply:** In the DL220, a battery is used for supplying the data logger (for metering and archiving) and an independent battery is used for operating the GSM/GPRS modem. The separate energy supply guarantees the function of the data logger at all times, with or without modem operation. The DL220 battery ensures a service life of at least 8 years.
The service life of the battery for operating the GSM/GPRS modem is dependent on the mode of operation, the data transmission itself and the reception field strength at the metering point. Configuration examples and the resultant battery service life can be found in the table overleaf. The use of a second battery (optional) for data communication means that the battery service life can be doubled.

## Main features

- Data recording for the supply of gas, water, district heating and electricity
- Peak-load display
- Associated apparatus for Ex zone 1 ⟨Ex⟩ II (2)G [E Ex ib] IIC
- Integrated GSM/GPRS modem for data communication without mains supply
- Station monitoring using spontaneous reporting function by GSM/GPRS modem
- Event-oriented storage of meter readings
- Two pulse inputs (intrinsically safe)
- Two pulse outputs
- Simple installation
- Simple operation

**Options:**

- Second battery for GSM/GPRS modem
- Data logger without GSM/GPRS modem

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# DL220: Battery-operated data logger with integrated GSM/GPRS radio data modem

| Technical data | |
|---|---|
| Order number | 83480060<br>- Design with integrated GSM/GPRS radio data modem<br>- Design without modem (can be retrofitted with a modem by the manufacturer) |
| Housing | Wall-mounted housing, ABS plastic |
| Dimensions | H 120 mm x W 120 mm x D 90 mm with screwed cable gland |
| Weight | Approx. 0.7 kg |
| Protection class | IP 65 according to EN 60529 |
| ATEX approval | Associated apparatus for Ex-Zone 1, identifier ⟨Ex⟩ II (2)G [E Ex ib] IIC |
| Ambient conditions | Temperature: -10 °C to +50 °C<br>Relative humidity: max. 93%, non-condensing |
| Power supply | Data logger: Li battery 3.6 V, 16.5 Ah<br>GSM/GPRS modem: Li-battery 3.6 V, 13 Ah (optionally 2 batteries) |
| Display | 2-line dot-matrix display with plain-text description of the values displayed<br>All parameters, settings and archived values can be displayed |
| Control panel | Keypad with 4 buttons |
| Pulse inputs | Two intrinsically safe inputs, individually sealable, input frequency max. 10 Hz,<br>freely definable as:<br>- Pulse input<br>- Status input |
| Signal outputs | Two outputs, output frequency max. 4 Hz,<br>freely definable as:<br>- Pulse output<br>- Warning/alarm output<br>- Status output |
| Archives | Monthly archive:<br>- Invoice-relevant meter readings as well as the formed daily and monthly maximum values<br>- Time when day is to begin can be set as required<br>- Storage capacity 15 months<br>Metering period archives:<br>- Event-oriented recording of meter readings with time stamp<br>- Recording interval (metering period) settable as required<br>- Storage capacity 7.5 months per input channel at a recording interval of 60 minutes |
| Logbooks | Event logbook<br>- Recording of non-periodic events (e.g. time changes) with time stamp<br>- Calibration events that are legally relevant are additionally recorded in the metering period archive<br>- Storage capacity 250 records<br>Change logbook (Audit trail)<br>- Recording of all parameter changes with time stamp, old and new values<br>- Storage capacity 200 records |
| Measured error | No loss of pulse<br>Display of current flow rate 5% |
| Data interface | Optical interface according to IEC 62056 21 (IEC 1107) for parameterisation and reading out of archives |
| Modem | Integrated GSM/GPRS modem, dual band (900/1800 MZZ) |

Examples for configuration of the data transfer and the resulting service life of the modem battery

| Operating mode | Interval | Data | Time frame [h] | Time frame [h/month] | number of SMS per month | Period per RDT [min] | Battey lifetime * 90% GSM level [years] | Battey lifetime * 50% GSM level [years] |
|---|---|---|---|---|---|---|---|---|
| PUSH (ComFTP) | daily | 24 values | - | not applicable | 0 | 2.5 min | approx. 4.8 | approx. 3.6 |
| PUSH (ComFTP) | daily | 24 values | 0.5 | 2 ** | 0 | 2.5 min | approx. 4 | approx. 3 |
| PUSH (SMS) | daily | 2 values | - | not applicable | 30 | 1 min | >10 | >10 |
| PULL | daily | 24 values | 0.5 | 15 | 0 | 2 min | approx. 1.9 | approx. 1.4 |
| PULL | weekly | 7 x 24 values | 1 | 4 | 0 | 10 min | approx. 4.8 | approx. 3 |
| PULL & PUSH | monthly | 720 values | 4 | 4 | 10 | 15 min | approx. 7 | approx. 5.3 |

* Information relates to one modem battery. With the use of a second battery lifetime will be doubled.
** Time frame in Push mode (ComFTP) is only needed for possible service activities

## Your contacts


Germany
Elster GmbH
Steinern Str. 19 - 21
55252 Mainz-Kastel
T +49 6134 605 0
F +49 6134 605 223
www.elster-instromet.com
info@elster-instromet.com

Belgium
Elster NV/SA
Rijkmakerlaan 9
2910 Essen
T +32 3 670 0700
F +32 3 667 6940
www.elster-instromet.com
info@elster-instromet.com

Singapore
Elster-Instromet Sdn. Bhd. (Singapore Branch)
160 Paya Lebar Road
#04-01 Orion@Paya Lebar
Singapore 409022
T +65 6247 7728
F +65 6247 7729
sales@elster-instromet.com.sg



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