REMOTE DATA TRANSMISSION UNIT & DATA LOGGER
BATTERY POWERED, LOW-MAINTENANCE, ROBUST

GSM-2 is a combination of an autonomous data logger and a remote data transmission unit in one device. When linked to a pressure transmitter or water level sensor, GSM-2 can autonomously collect up-to-date measurement values for pressure and temperature (and optionally for conductivity as well) and then transmit this data via SMS, e-mail or FTP using the GSM wireless network (GPRS connection).

The GSM-2 remote data transmission unit is normally used in hydrology and hydrogeology applications as a means of recording water levels. It is also used by construction companies for pressure measurements. The remote data transmission unit is offered in various housings that accommodate different installation requirements in the locations where it is to be used. With its wide range of water level sensors and pressure transmitters, KELLER is able to offer the right solution for virtually any measuring situation.

The transmitted measurement data is received via the free GSM Datamanager software system, which also processes, stores and displays the readings. The transmitted data is received via the free GSM Datamanager software system which also processes, stores and displays the readings, and allows for remote configuration from the user’s workstation.

GSM-2 stands out through the following attributes:
• High-level of data security (internal, non-volatile memory)
• Low maintenance (battery operated, service life of up to 10 years)
• Robust and able to withstand short periods of immersion
• Adaptable (available in various housings)
• Can be used in various applications (many different sensor interfaces available)
• Free data management software (Datamanager)
• Integrated barometer and temperature sensor

GSM-2 is available in the following housing variants:

<table>
<thead>
<tr>
<th>Housing Variant</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSM-2</td>
<td>For installation inside tubes ≥ 2” with one pressure transmitter or level sensor</td>
</tr>
<tr>
<td>GSM-2 Box</td>
<td>For installation outside tubes with up to 5 pressure transmitters or level sensors</td>
</tr>
<tr>
<td>GSM-2 Mini</td>
<td>For installation outside tubes with one pressure transmitter or level sensor</td>
</tr>
<tr>
<td>GSM-2 Storm</td>
<td>For field measurements with up to 2 pressure transmitters or level sensors</td>
</tr>
<tr>
<td>GSM-2 Ei</td>
<td>For measuring pressure in potentially explosive gas atmospheres with a max. of one pressure transmitter or level sensor</td>
</tr>
</tbody>
</table>

Overview of housing variants:

<table>
<thead>
<tr>
<th>Housing Variant</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSM-2</td>
<td>48 x 330 mm*&lt;br&gt;(Ø x H)</td>
</tr>
<tr>
<td>GSM-2 Box</td>
<td>200 x 100 x 80 mm*&lt;br&gt;(l x W x D)</td>
</tr>
<tr>
<td>GSM-2 Mini</td>
<td>185 x 57 x 80 mm*&lt;br&gt;(l x W x D)</td>
</tr>
<tr>
<td>GSM-2 Storm</td>
<td>249 x 300 x 119 mm*&lt;br&gt;(l x W x D)</td>
</tr>
<tr>
<td>GSM-2 Ei</td>
<td>180 x 180 x 72 mm*&lt;br&gt;(l x B x T)</td>
</tr>
</tbody>
</table>

*Dimensions excluding antenna
Specifications GSM-2

Field of Application: Installation in 2” tubes for measuring groundwater levels (corresponding accessories available – e.g. level sealing cap)

Connection: 1 cable gland (cable diameter of 3,5…6,5 mm)

Level Sensor: Diverse level sensors, preferably with a digital RS485 interface: Series 36 XW, 36 Xi W (CTD), 46 X (measures pressure, temperature and, if necessary, conductivity)

Interfaces / Measuring inputs:
- RS 485 KELLER-BUS
- SDI12 for the YSI multi-parameter sensor /
- 2 x voltage inputs (0…2,5 VDC, 10-bit resolution)
- 2 x digital input (alarm input / counter input)

Power Supply for Sensors: 12 V / 5 V / 3,7 V

Atmospheric Pressure Sensor:
- Measurement Range: 0,8…1,2 bar abs.
- Resolution: ca. 0,03 mbar
- Accuracy Pressure (-20…50 °C): max. ± 2 mbar
- Long-Term Stability: 1 mbar/year
- Accuracy Temperature (-20…50 °C): max. ± 2 °C

Operating Temperature: -20…50 °C / optional -30 °C

Supply:
- Lithium Battery type DD 3,9 V / 35 Ah

GSM Band: (Quad-Band) 850 / 900 / 1800 / 1900 MHz

SIM Card: Mini-SIM (ID-000, 25 x 15 mm)

Mode of Transmission: SMS, E-Mail (POP, SMTP), FTP

Antenna Interface: SMA Connector (female)

Shortest Measuring / Transmission Rate: 1 minute

Database: > 28'000 measuring values with time indication (2 MBit)

Battery life 1): Up to 10 years with 1 measurement per hour and 1 transmission per day

Configuration Interface: RS 485: type of connector Fischer DEE 103A054

Housing / Seals:
- Stainless Steel 316L (DIN 1.4435) / Viton®, Nitrile

Dimensions Housing: 48 x 330 mm (diameter x height)

Protection: IP65 / Optional IP67

Weight: 1,5 kg

1) External influences and reception quality can lower battery service life.

Specifications GSM-2 Box (remaining specifications as per GSM-2)

Field of Application: Simple installation with up to five pressure transmitters or level sensors

Connection: 1 to 5 cable glands (cable diameter 3,5…6,5 mm)

Housing / Seals: Aluminium, powder coated / Viton®, EPDM

Dimensions Housing: 200 x 100 x 80 mm (H x W x D)

Protection: IP65 / Optional IP67

Weight: 1,5 kg

Specifications GSM-2 Mini (remaining specifications as per GSM-2)

Field of Application: For connection of one pressure transmitter or level sensor, housing with small dimension

Connection: 1 x connector either type LEMO EVP.1V.306.CLL or Binder 723 cable connector

Supply:
- Lithium Battery type D 3,9 V / 16 Ah

Battery life 1): Up to 5 years with 1 measurement per hour and 1 transmission per day

Housing / Seals: Aluminium, powder coated / Viton®, EPDM

Dimensions Housing: 185 x 57 x 80 mm (H x W x D)

Protection: IP65 / Optional IP67

Weight: 0,8 kg

1) External influences and reception quality can lower battery service life.
Specifications GSM-2 Storm (remaining specifications as per GSM-2)

Field of Application
Field measurements (high transmission rates or long battery life) with up to two pressure transmitters or level sensors

Connection
1 or 2 x Fischer Series 405 connector

Supply
1 or 2 Lithium Batteries type DD 3,9 V / 35 Ah

Housing / Seals
Spray Cast HPX® high performance resin / Buna-N

Lockable with padlock

Dimensions Housing
249 x 300 x 119 mm (H x W x D)

Protection
IP67

Weight
max. 2,2 kg

Specifications GSM-2 Ei (remaining specifications as per GSM-2)

Field of Application
Potentially explosive gas atmospheres with a max. of one pressure transmitter or level sensor 1)

Connection
max. 1 cable input (cable diameter 3,5...6,5 mm)

Level Probes
– Series 33 X Ei, 35 X Ei, 36 XW Ei
– Series PD-33 X Ei oder PD-39 X Ei
– Series 41 X Ei, 46 X Ei

Housing / Seals
Aluminium, powder coated / EPDM

Dimensions Housing
180 x 180 x 72 (H x W x D)

Protection
IP65 / optional IP67

Weight
= 3 kg

1) Depending on their designation, some pressure transmitters may be installed in potentially explosive gas atmospheres. GSM-2 Ei may only be installed outside potentially explosive gas atmosphere zones.

GSM-Datamanager

Measurement data transmitted by the GSM-2 is received via the free GSM Datamanager software system, which also processes, stores and displays the readings. The software can perform a variety of functions tailored to the given water level monitoring or pressure monitoring task.

For example, it can remotely configure the measuring system from the user’s workstation, set alarms for predefined events, take continual or event-based measurements, call up data and calculate water levels.

The GSM Datamanager PC software system stores measurement data in either a local database (SQLite) or in a server database (MySQL). The database also allows data to be accessed using external software, which means GSM-2 can be incorporated into existing data collection systems.

The software can also be used to set up and manage recurring data export operations at selected planned intervals. The collected measurement data can be exported in diverse formats (e.g. ASCII or CSV files) and made available to end customers in Microsoft Excel for viewing and processing.

The software only supports Windows operating systems (Windows XP and up).