

REMOTE DATA TRANSMISSION UNIT & DATA LOGGER

GSM-2

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





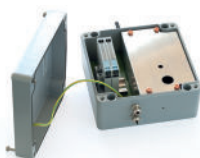
GSM-2 is available in the following housing variants:

- GSM-2** For installation inside tubes $\geq 2"$ with one pressure transmitter or level sensor
- GSM-2 Box** For installation outside tubes with up to 5 pressure transmitters or level sensors
- GSM-2 Mini** For installation outside tubes with one pressure transmitter or level sensor
- GSM-2 Storm** For field measurements with up to 2 pressure transmitters or level sensors
- GSM-2 Ei** For measuring pressure in potentially explosive gas atmospheres with a max. of one pressure transmitter or level sensor



GSM-2 with level sensor
PAA-36 XW

Overview of housing variants:

GSM-2	GSM-2 Box	GSM-2 Mini	GSM-2 Storm	GSM-2 Ei
48 x 330 mm* (ϕ x H)	200 x 100 x 80 mm* (H x W x D)	185 x 57 x 80 mm* (H x W x D)	249 x 300 x 119 mm* (H x W x D)	180 x 180 x 72 mm* (H x B x T)
				

*Dimensions excluding antenna

Subject to alterations

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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 (integrated)	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	
GSM Network	2,5 G / GPRS	
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.

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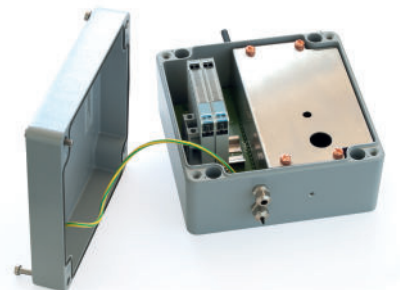
Specifications GSM-2 Storm (remaining specifications as per GSM-2)

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

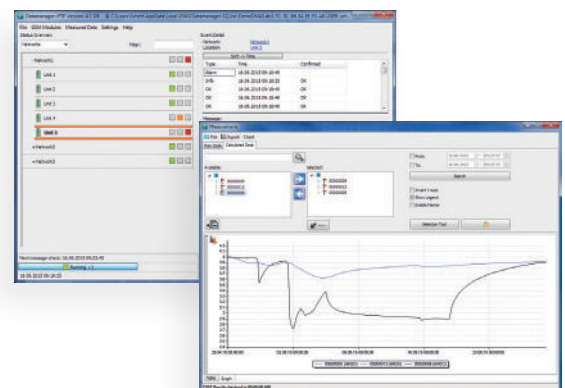
Measurement data transmitted by the GSM-2 is received via the free GSM Datamanager software system, which also processes, stores and displays the readings. The software can perform a variety of functions tailored to the given water level monitoring or pressure monitoring task.

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).



GSM-2 Datamanager PC software