Installation and Operating Instructions

GWF-Water meters

1. Field of application

Type			Unico®	MTK	MTW
Pulser /Interface			IPG/Encoder	IPG/Encoder	IPG/Encoder
Nominal flow rate	Q_3	m³/h	2,5/4	2,5 – 25	2,5 – 25
Nominal diameter	DN	mm	15/20	15 – 50	15 – 50
Max. operating pressure	PN	bar	16	16/25 [1)]	16/25 [1)]
Temperature	T	°C	30/90	30/50	90
Ambient temperature	T_{amb}	°C	+5 ... +55	+5 ... +55	+5 ... +55

[1)] with flanged connections

GWF water meters are suited for the measurement of low to middle flowrates. These instructions contain all important information for the installation and operation of the above mentioned water meters. Installation, connection and maintenance must only be carried out by expert technicians who, first of all, have read and understood the operating instructions.

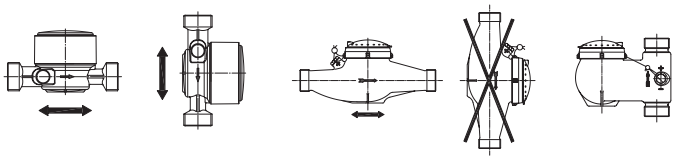
2. Sizing of the water meter

GWF water meters are to be sized according to the relevant ratings. A continuous overload will lead to the meter being damaged. The maximum overload flowrate Q_4, calculated as 1,25*Q_3, may only take place at a maximum of 1 hour per day and over the life span of the meter a maximum of 100 hours summed together. When specifying the meter the operating conditions occurring in the application are to be considered. In particular these are:

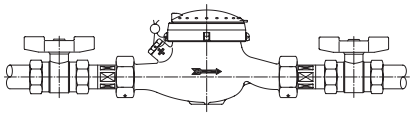
- Nominal flow rate
- Max. operating pressure
- Operating temperature
- Ambient temperature
- Installation position (Riser- or down/fall housing)

3. Installation information

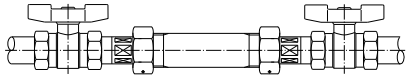
1. Singlejet meters (Unico®) can be installed in horizontal or vertical pipe lines. Preferential is the installation in horizontal pipe work. Multijet meters (MTK, MTW) can also be installed in horizontal and vertical pipelines. For the installation in vertical pipe work, special meter housings are available. The meter type plate must always face upwards.



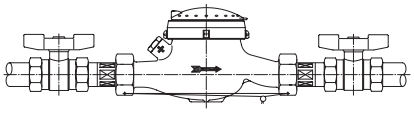
2. For water meters no inlet and outlet distances must be adhered to.
3. It is recommended to install shut-off valves before and after the meter, to facilitate the installation and removal of the meter for periodic inspection and maintenance work.



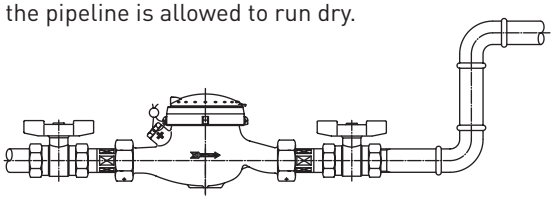
4. It is necessary to purge/rinse the pipeline before initial installation of the water meter. In place of the meter a bypass piece must be installed, so that foreign objects do not block the strainer of the meter. Thus, accurate measurement can be ensured.



5. Pay attention to the direction of flow when installing the meter. An arrow on the meter body indicates the direction of flow.
6. Before installing the water meter check if a clean strainer is inserted inside the inlet part of the water meter.
7. During installation it is important to check that the inside of the couplings/unions are clean, intact and correctly positioned seals/gaskets are used.
8. In order to prevent unauthorized manipulation of the water meter the couplings/unions can be secured by means of a wire and seals against tampering.



9. Excessive force when tightening the couplings/unions of the meter must be avoided in order to prevent damage being caused to the housing of the meter.
10. In order to guarantee correct measurement, it is very important to ensure that no air can enter the water meter or that the pipeline is allowed to run dry.



11. With many installations water pipelines serve as earthing for electrical systems. Depending on the actual application an electrical bypass of the water meter is to be ensured.
12. The meter should be protected against mechanical jolts or vibration, which could be present in the installation place.
13. The pipeline should be securely fastened before and after the meter.
14. Measures should be taken, so that the meter is not damaged by hydraulic influences such as, pressure shocks and cavitations. Additionally it should be guaranteed that the meter is not damaged due to frozen water being encountered.

15. Signal (pulse output) wiring should never be laid together with mains power lines and must be independently protected. The distance between signal (pulse output) and mains power line must be a min. distance of 50mm.

4. Commissioning

During commissioning and after every time the meter has run dry, shut-off valves must be opened slowly in order to avoid pressure shocks on the meter.

5. Maintenance and service

GWF water meters are maintenance free under normal operating conditions. They excel in that they have a long life span. The life span essentially depends on the water quality and on the conditions and capacity of flow. We recommend however to examine the following points periodically.

1. Before working on the installation, it is to be examined whether the pressure is relieved in the pipeline.
2. When the water supply is closed, all the pointers of the register should stand still. When the water supply/inlet is slowly opened the pointers should begin to turn-over evenly and slowly.
3. If the supply network is subject to dirty conditions, it is recommended, to clean the strainer on the inlet of the meter on a regular basis.
4. The stamp on the lead seal should be verified if it is in tact.
5. It should be verified that all shut-off valves before and after the meter are fully opened, and if they can be closed and there are no leaks present.
6. The meter and pipe work of the installation should be checked for leaks.
7. Check to see that the environment, in which the meter is installed, is devoid of water, where dripping water onto the register could lead to water ingress.
8. Pay attention that the meter connections are securely attached and that all pipelines are undamaged and intact.
9. It should be verified that the ambient temperature lies within the admissible temperature range of the water meter.

Basis for the installation, commissioning, monitoring and maintenance of water meters is the OIML R49 Part 1 – Metrological and technical requirements.

6. Disassembly and disposal

It should be ensured that the water meters are disposed of in a recycling just manner.

7. Safety guidelines

1. The water meters should always be handled only on the meter housing and should not be carried by either the lid or pulser cable.
2. The devices may only be used for the intended purpose. GWF MessSysteme AG guarantees in the context of the general trading conditions the quality of its products. The responsibility for the correct installation as well as professional handling falls within the scope and receipt of goods on the owner or operator.

8. Technical data IPG 14

Switching element		Reed
Switching voltage	U_{max}	42V AC/DC
Switching current	I_{max}	100mA
Switching capacity	P_{max}	4W
Resistor	R	18 Ohm
Conductor cross section		0,14mm^2
Switching cycles		app. 10^7

9. Interface GWFcoder®

UNICOcoder®, MTKcoder®, MTWcoder®	
SCR(IEC)	Protocol acc. IEC 62056-21 Mode A (IEC 1107)
M-Bus EN 13757	Wired M-Bus (OMS)

UNICOcoder® MP, MTKcoder® MP, MTWcoder® MP Multi Protocol Interface	
SCR(IEC)	Protocol acc. IEC 62056-21 Mode A (IEC 1107)
M-Bus EN 13757	Wired M-Bus (OMS)

The polarity of the connecting wires makes no difference (polartity insensitive)

Declaration of conformity CE

Manufacturer: GWF MessSysteme AG
Obergrundstrasse 119, CH-6002 Luzern
Object: Water meters (MI-001)
Type: Unico2, MTK3, MTW3

We hereby declare, that the products conform to the below mentioned regulations.

Applied EC Directives and conformity assessment procedures	
European directive for measuring instruments	2004/22/EG (MI-001)
International OIML-Recommendations	OIML R49 (MI-001)
The equipment is marked with	CE M XX 1259 XX = Year of putting into use
Conformity certificate according to MID (Module D)	Federal office of Metrology METAS
Notified bodies	METAS-Cert Nr. 1259

Location and date
Lucerne, 30th April 2013

Thomas Vogel
Metrology and calibration

BAe10207 – 15.06.2013
Subject to modification

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