Lorenz

Deutsche Wasserzähler

# High-quality water meters

## 100% Made in Germany.




**Data sheet**

Digital radio water meter DFZ

Version 1.0 - October 2026

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# 1 Specification:

## 1.1 Application

A radio water meter measures water consumption just like a conventional meter, but transmits the data automatically via radio waves. This allows for contactless meter reading without needing to enter the metering point.

## 1.2 Overview

- All common single-jet and capsule meters available
- EU MID approval
- Integrated certified OMS radio
- Digital display
- Battery lifetime up to 14 years
- Leakage-, reverse flow- and manipulation detection



## 2. Technical data:

| | |
|---|---|
| Measurement methods | Bidirectional inductive impeller sensing with integrated sensor value validation |
| Max. pressure drop | 0,63 bar (varies by meter type) |
| IP-class | IP68 |
| Environment- / Ambietclass | B |
| Mechanical class | M1 |
| Electromagnetic class | E1 |
| Ambient temperature | 5°C to 55°C |
| Temperature storage | 5°C to 55°C (average max. 25°C) |
| Transport temperature | -20°C to 50°C |
| Cover | 64,5mm (transparent and rotatable 360°) |
| Display | LCD with 8 digits + special signs |
| Button | capacitive touch button |
| Errors and notes | Leakage-, reverse flow - and manipulation detection |
| Service interface | infrared |
| Customer configuration | via PC software + optical head |
| Battery | 3V LiMnO2 (< 1g) lithium contains) |
| Lifetime | up to 14 years<br>(depending on communication settings) |
| Communication | OMS/wMBus<br>with 3 selectable telegram types (short, medium, long) and configurable transmission time settings |
| Installation position | horizontal / vertical |

# 3 Model-specific data:

## 3.1 Inline meters

| Typ (ISO 4064) | DN15 | DN15 | DN15 | DN20 | DN20 |
|---|---|---|---|---|---|
| Typ (Lorenz) | ET80 | ET110 | ET130B | ET130U | ET130 |
| Length [mm] | 80 | 110 | 130 | 130 | 130 |
| Q3 [m³/h] | 2,5 | 2,5 / 1,6* | 2,5 | 2,5 | 4,0 |
| Installation position | horizontal / vertical | | | | |
| Thread | G3/4" | G3/4" | G3/4" | G1" | G1" |
| Weight [g] | 400 | 430 | 460 | 550 | 530 |
| Temperature range | T30 (0,1-30°C), T90 (0,1-90°C) | | | | |
| Pressure class | MAP10 | | | | |
| typical start flow [l/h] | 4 | 4 | 4 | 4 | 5 |

**upon request*

## 3.2 Measuring capsule meters

| Typ (ISO 4064) | IST | MET | MOC/MOE | TE1 | MUK |
|---|---|---|---|---|---|
| Typ (Lorenz) | MPM7 | MPM9 | MPM10 | MPM3 | MPM11 |
| Length [mm] | 80 | 110 | 130 | 130 | 130 |
| Q3 [m³/h] | - | - | - | - | - |
| Installation position | horizontal / vertical | | | | |
| Thread | G2" | M64x2 | M65x2 | M62x2 | G2¼" |
| Weight [g] | 440 | 290 | 300 | 430 | 400 |
| Temperature range | T30 (0,1-30°C), T90 (0,1-90°C) | | | | |
| Pressure class | MAP10 | | | | |
| typical start flow [l/h] | 4 | 4 | 4 | 4 | 4 |

## 3.2 Measuring capsule meters

| Typ (ISO 4064) | A34 | DM1 | MB2 | MB3 | M7L** | WE1 | WGU |
|---|---|---|---|---|---|---|---|
| Typ (Lorenz) | – | – | – | – | – | – | – |
| Length [mm] | – | – | – | – | – | – | – |
| Q3 [m³/h] | 2,5 | 2,5 | 2,5 | 2,5 | 2,5 | 2,5 | 2,5 |
| Installation position | horizontal / vertical | | | | | | |
| Thread | M77x1,5 | M60x2 | M80x1,5 | M76x1,5 | M58x1,5 | M78x1,5 | M66x1,25 |
| Weight [g] | 610 | 490 | 790 | 560 | 830 | 850 | 470 |
| Temperature range | T30 (0,1-30°C) / T90 (0,1-90°C) | | | | | | |
| Pressure class | MAP10 | | | | | | |
| typical start flow [l/h] | 5 | 5 | 5 | 5 | 5 | 5 | 5 |

*** long and short version*

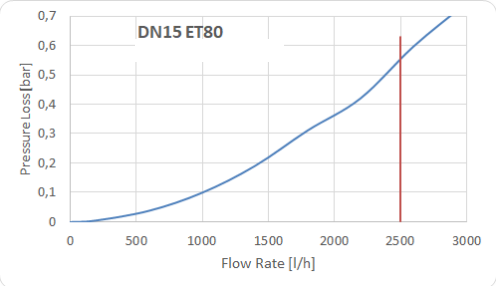
## 3.3 Domestic water meter

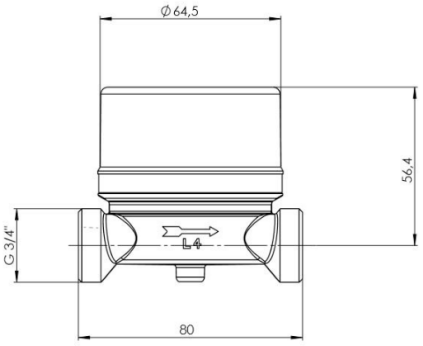
| Typ | CRI | DN20 | DN20 riser pipe | DN25 | DN25 riser pipe | DN40 | DN40 riser pipe |
|---|---|---|---|---|---|---|---|
| Typ (Lorenz) | MP-CRI | – | – | – | – | – | – |
| Length [mm] | – | 190 | 105 | 260* | 150 | 300 | 150 |
| Q3 [m³/h] | 4,0 | 4,0 | 4,0 | 10* | 10 | 16 | 16 |
| Installation position | horizontal | | | | | | |
| Thread | G3" | G1" | G1" | G1¼" | G1¼" | G2" | G2" |
| Weight [g] | 620 | 1600 | 1960 | 2490 | 2740 | 5220 | 4990 |
| Temperature range | T30 (0,1-30°C) | | | | | | |
| Pressure class | MAP16 | | | | | | |
| typical start flow [l/h] | 5 | 5 | 5 | 12 | 12 | 25 | 25 |

**upon request*

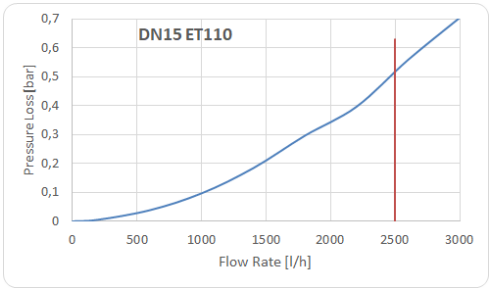
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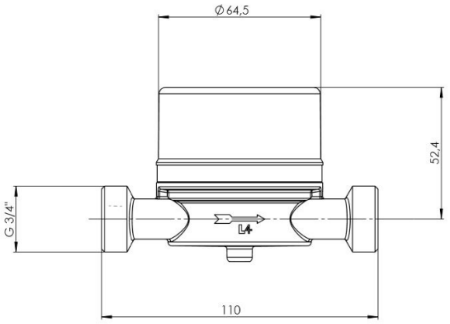
## 4.1 Inline water meter DN 15 ET80



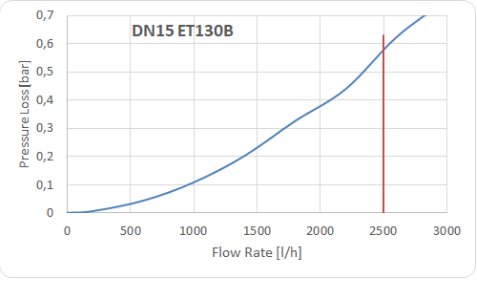



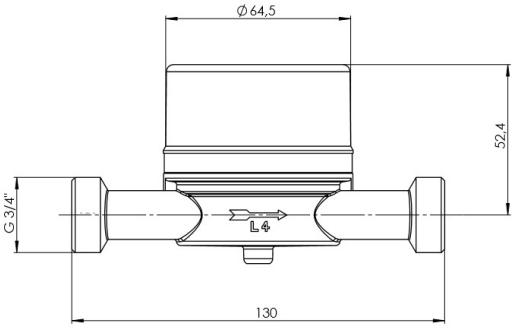

## 4.2 Inline water meter DN15 ET110



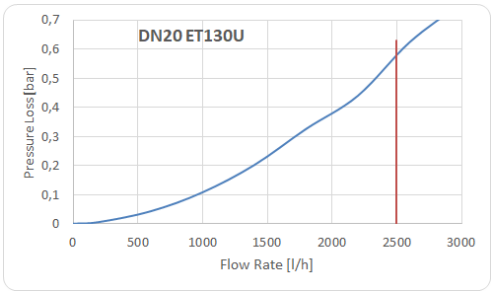



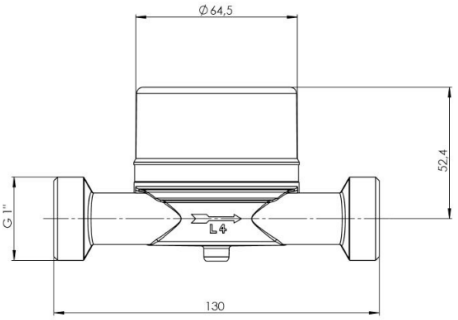

## 4.3 Inline water meter DN15 ET130B



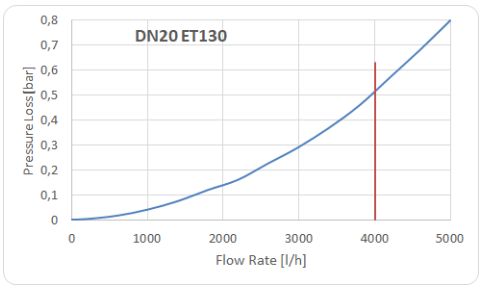



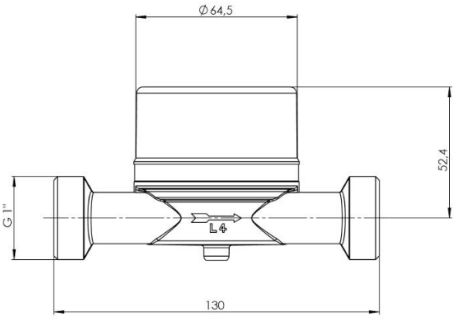
## 4.4 Inline water meter DN20 ET130U



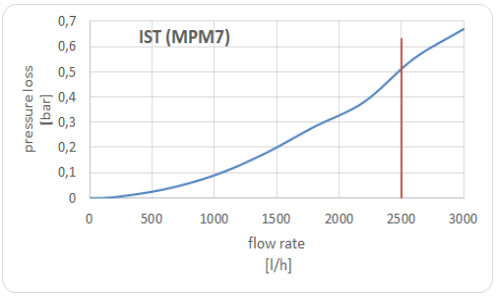



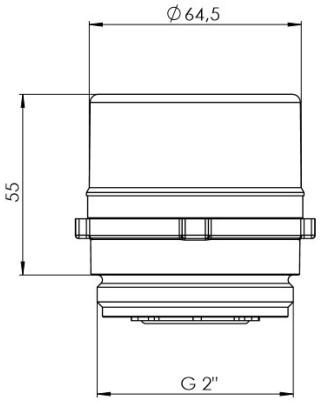

## 4.5 Inline water meter DN20 ET130



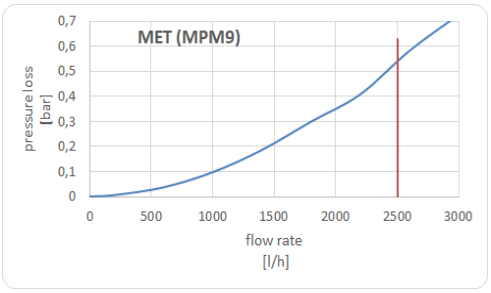



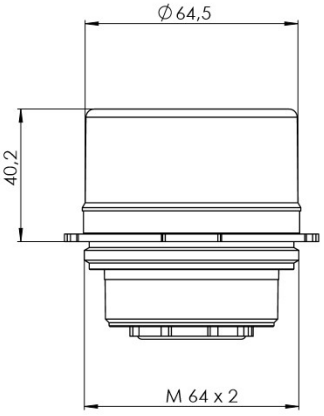
## 4.6 Measuring capsule meters IST (MPM7)



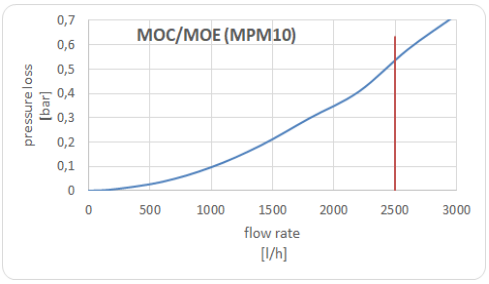



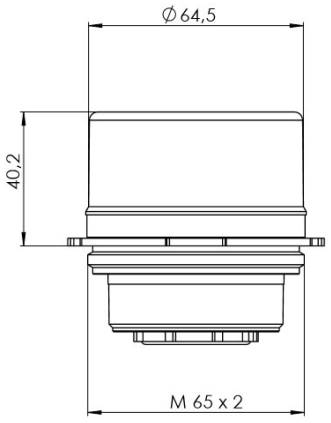

## 4.7 Measuring capsule meters MET (MPM9)



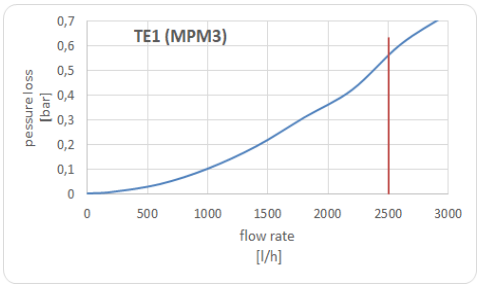



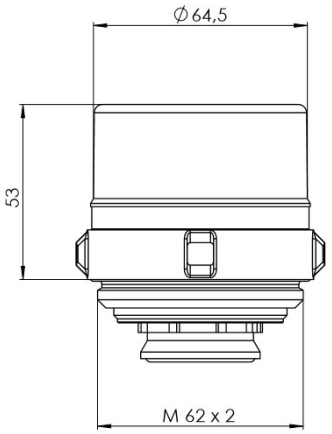

## 4.8 Measuring capsule meters MOC/MOE (MPM10)



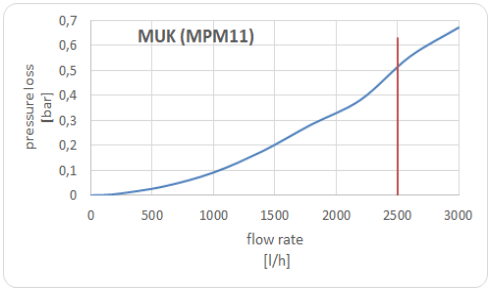



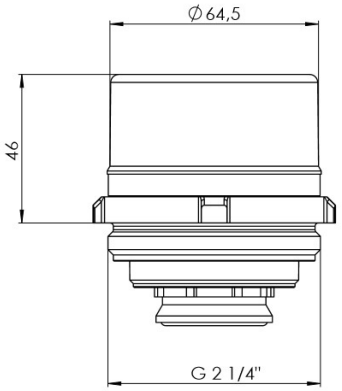
## 4.9 Measuring capsule meters TE1 (MPM3)



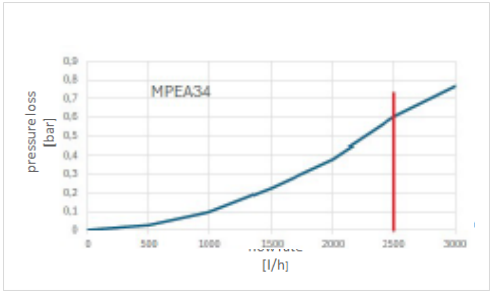



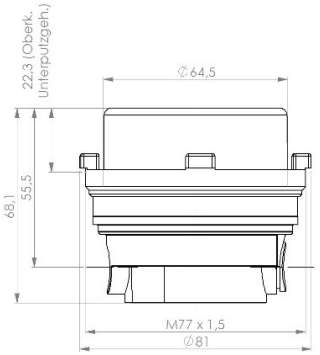

## 4.10 Measuring capsule meters MUK (MPM11)



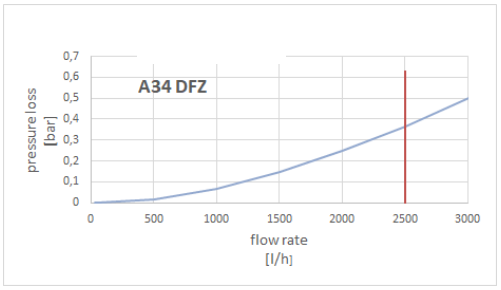



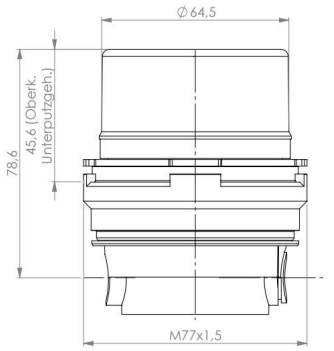

## 4.11 Measuring capsule MPEA34



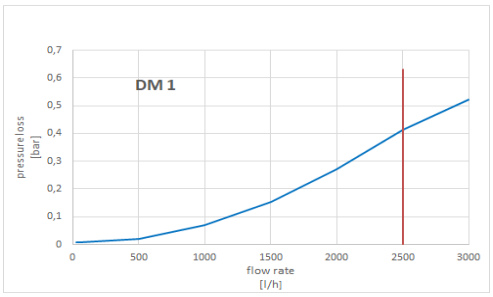



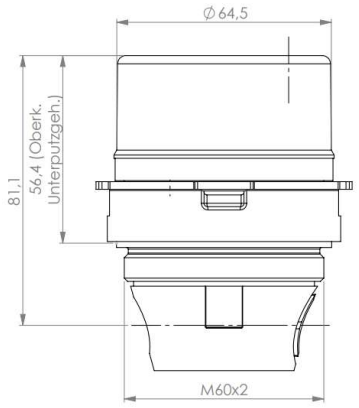
## 4.12 Measuring capsule meters A34



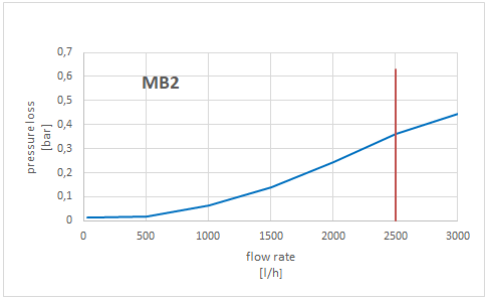



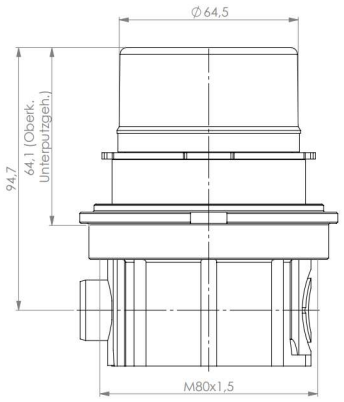

## 4.13 Measuring capsule meters DM1



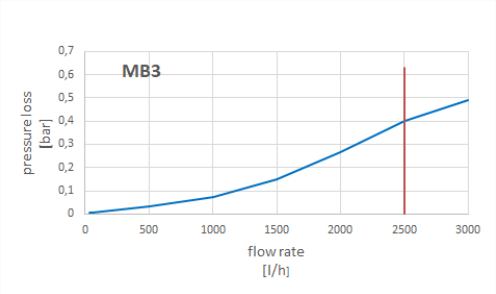



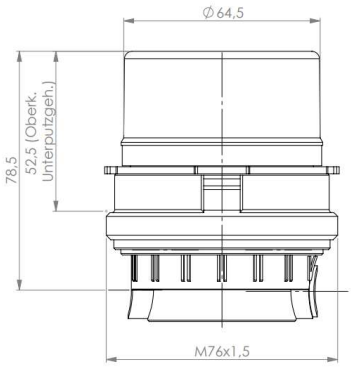

## 4.14 Measuring capsule meters MB2



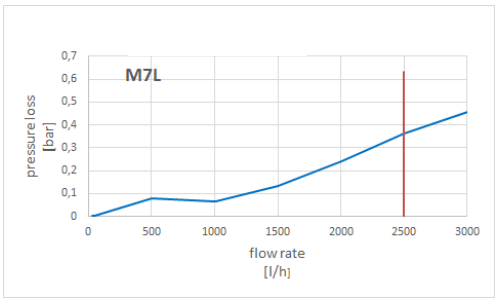



## 4.15 Measuring capsule meters MB3

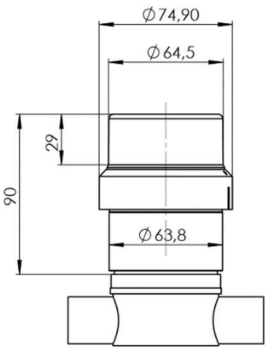


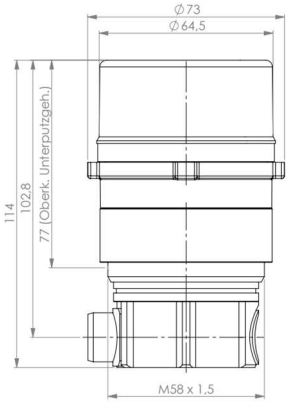

## 4.16 Measuring capsule meters M7L



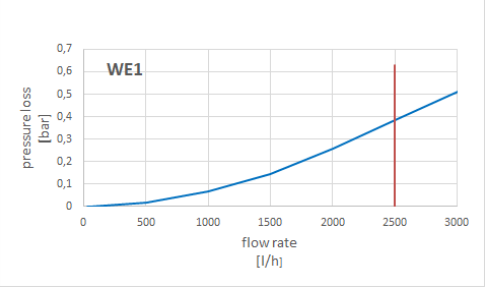

*long version

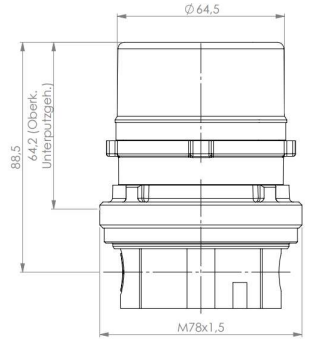



*short version

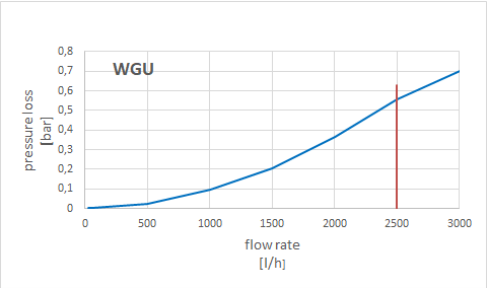


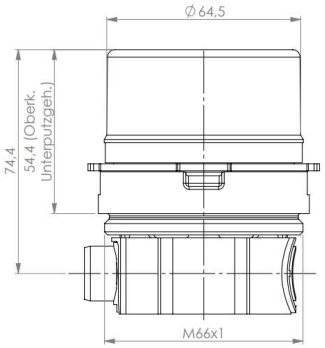

## 4.17 Measuring capsule meters WE1



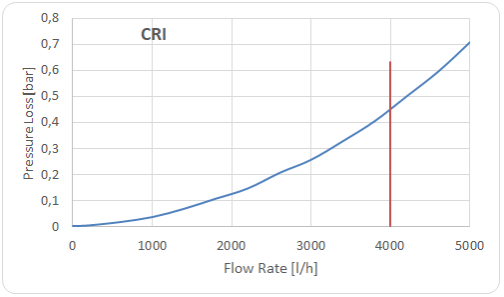



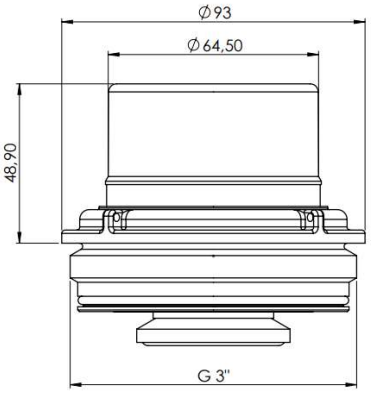
## 4.18 Measuring capsule meters WGU



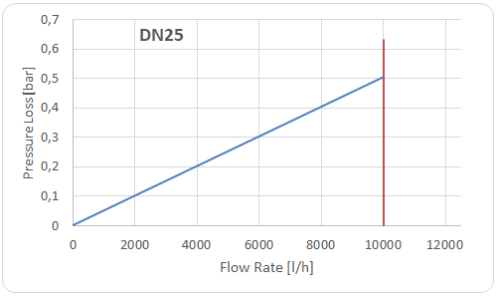



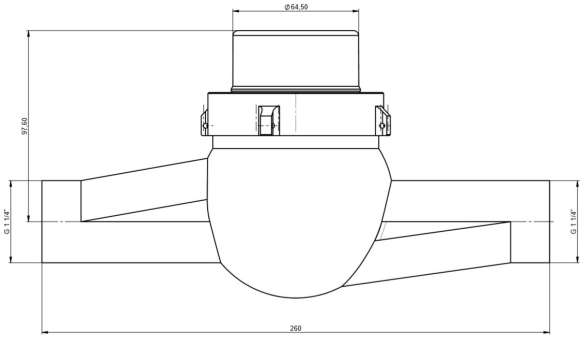
## 4.19 Domestic water meter CRI



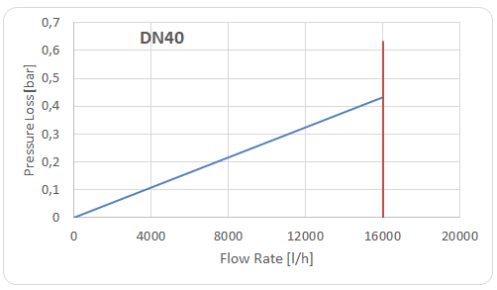



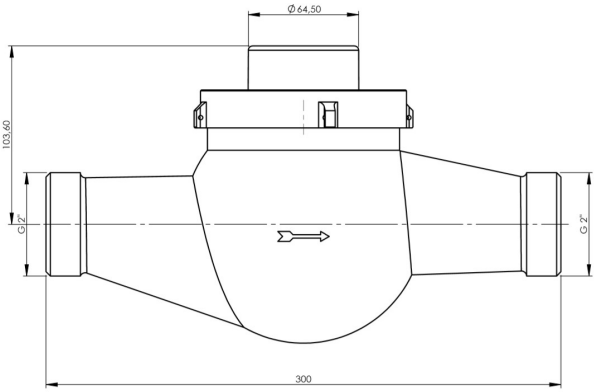

## 4.20 Domestic water meter DN25



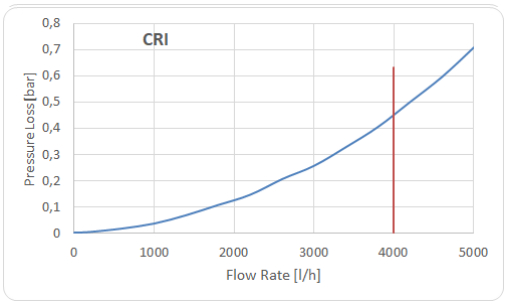



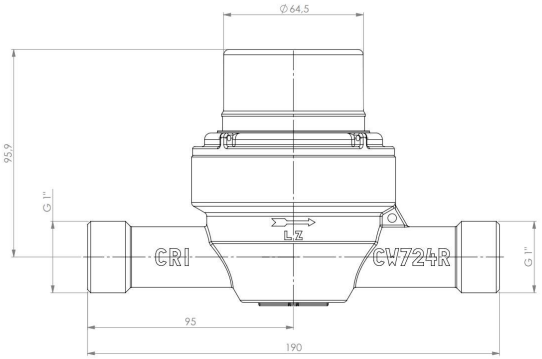

## 4.21 Domestic water meter DN40



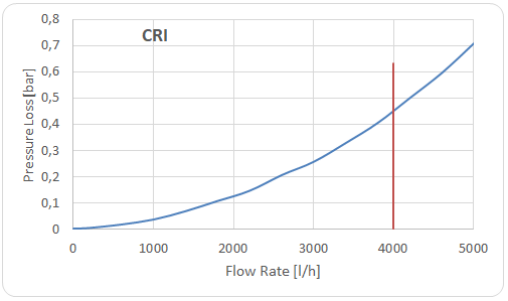



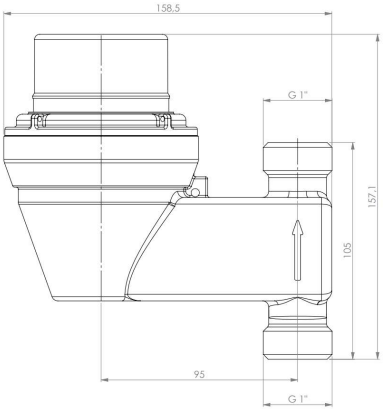
## 4.22 Domestic water meter DN20



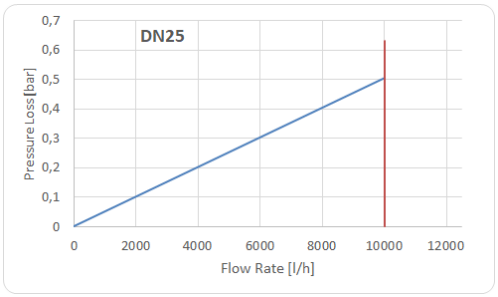



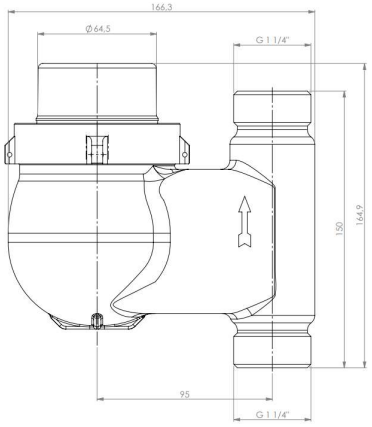

## 4.23 Domestic water meter DN20 riser pipe



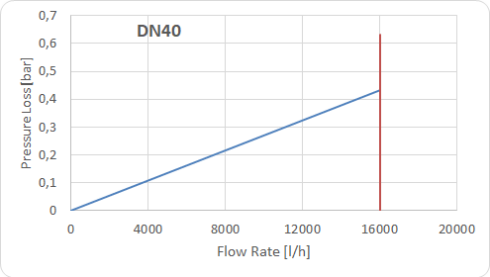



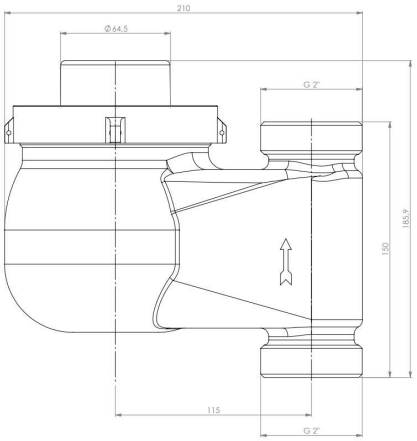

## 4.24 Domestic water meter DN25 riser pipe



## 4.25 Domestic water meter DN40 riser pipe



## 5. Communication:

| | |
|---|---|
| OMS specification | 3.0.1<br>4.1.2 |
| Radio mode | C1 & T1 |
| Telegram format | A |
| Encryption | 128 Bit |
| Security profile | A / Encryption mode 5<br>B / Encryption mode 7 (BSI TR-03109) |
| Transmission time settings | Hours of the day, days of the week, days of the month, months |
| Telegrams | Short (timestamp, meter reading, error code, battery voltage)<br>medium (short + reference date, reference value, 3 monthly values<br>long (medium + 12 additional monthly values)) |
| Installationtelegrams | For 1 hour after radio activation with a transmission interval of 36 seconds |

## 5.1 OMS - SHORT telegram in detail

Without CRC checksums, unencrypted telegrams without "0x2F" padding bytes

| Bytes | Meaning | Note | Encryption block |
|---|---|---|---|
| 0xXX | L-field: length | OMS 3.0.1 unencrypted -> 0x23 (=35)<br>OMS 3.0.1 encrypted with Mode 5 -> 0xE (=46)<br>OMS 4.1.2 unencrypted -> 0x26 (=38)<br>OMS 4.1.2 encrypted with mode 7 -> 0x43 (=67) | - |
| 0x44 | C-field: no reply | 0x46 for installation messages | - |
| 0xFA<br>0x12 | M-field: manufacturer code | Lorenz = DWZ = 12FA | - |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | A-field: 8-digit SN | BCD encrypted | - |
| 0xXX | A-field: version / manufacturing block | | - |
| 0xXX | A-field: device typ / medium | cold water = 0x07<br>hotwater = 0x08 | - |
| 0x8C | CI-field : Extended Link Layer (ELL) | only by OMS 4.1.2 | - |
| 0x20 | ELL: CC-field | only by OMS 4.1.2<br>0x20 = syncronous | - |
| 0xXX | ELL: ACC-field | only by OMS 4.1.2 | - |
| 0x90 | CI-field: authentification and fragmentation layer (AFL) | only by OMS 4.1.2 and when encryption is enabled | - |
| 0x0F | AFL: fragmentation control field | only by OMS 4.1.2 and when encryption is enabled | - |
| 0x00<br>0x2C | AFL: fragmentation control field | only by OMS 4.1.2 and when encryption is enabled<br>0x2C = Message Control field, Message Counter field and MAC included in AFL | - |
| 0xXX | AFL: Message control field | only by OMS 4.1.2 and when encryption is enabled | - |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | AFL: Message counter field | only by OMS 4.1.2 and when encryption is enabled | - |
| 0xXX<br>0xXX<br>0xXX<br>0xXX<br>0xXX<br>0xXX<br>0xXX<br>0xXX | AFL: MAC | only by OMS 4.1.2 and when encryption is enabled | - |
| 0x7A | CI-field: short header | | - |

## 5.1 OMS - SHORT telegram in detail

Without CRC checksums, unencrypted telegrams without "0x2F" padding bytes

| Bytes | Meaning | Note | Encryption block |
|---|---|---|---|
| 0xXX | Accessnumber | | - |
| 0xXX | M-Bus status flag and error | no error = 0X00 | - |
| 0xXX<br>0xXX | Configuration field | 0x2000 = synchronous, no encryption<br>0x2520 = synchronous, encrypted Mode 5,<br>2 encryped blocks each 16 bytes long<br>0x0720 = encrypted Mode 7, 2 encrypted blocks | - |
| 0x10 | configuration field extension | only by OMS 4.1.2 and when encryption is enabled | - |
| 0x2F<br>0x2F | Padding byte or encryption confirmation | only when encryption is enabled | 1 |
| 0x04 | DIF = 32bit | | 1 |
| 0x6D | VIF = Date / Time (type F) | | 1 |
| 0xXX<br>0xXX<br>0xXX | Current date / time | Data format type F | 1 |
| 0xXX | | | - |
| 0x04 | DIF = 32bit | | 1 |
| 0x13 | VIF = volume in liters | | 1 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | current meter reading | | 1 |
| 0x02 | DIF = 16bit | | 1 |
| 0xFD | VIF = extended code table | | 1 |
| 0x17 | VIFE = error flags | | 2 |
| 0xXX<br>0xXX | Error flags | | 2 |
| 0x01 | DIF 0 8bit | | 2 |
| 0x01 | VIF = etended code tabele | | 2 |
| 0x01 | VIFE = electrical voltage in 0,1 V | | 2 |
| 0x01 | Battery voltage (average) | | 2 |
| 0x2F<br>0x2F<br>0x2F<br>0x2F<br>0x2F<br>0x2F<br>0x2F<br>0x2F<br>0x2F<br>0x2F | Padding bytes for a complete encryption block | only when encryption is enabled | 2 |

## 5.2 OMS - MIDDLE telegram in detail

Without CRC checksums, unencrypted telegrams without "0x2F" padding bytes

| Bytes | Meaning | Note | Encryption block |
|---|---|---|---|
| 0xXX | L-field: length | OMS 3.0.1 unencrypted -> 0x42 (=66)<br>OMS 3.0.1 encrypted with Mode 5 -> 0x4E (=78)<br>OMS 4.1.2 unencrypted -> 0x45 (=69)<br>OMS 4.1.2 encrypted with mode 7 -> 0x63 (=99) | - |
| 0x44 | C-field: no reply | 0x46 for installation messages | - |
| 0xFA<br>0x12 | M-field: manufacturer code | Lorenz = DWZ = 12FA | - |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | A-field: 8-digit SN | BCD encrypted | - |
| 0xXX | A-field: version / manufacturing block | | - |
| 0xXX | A-field: device typ / medium | cold water = 0x07<br>hotwater = 0x06 | - |
| 0x8C | CI-field : Extended Link Layer (ELL) | only by OMS 4.1.2 | - |
| 0x20 | ELL: CC-field | only by OMS 4.1.2<br>0x20 = syncronous | - |
| 0xXX | ELL: ACC-field | only by OMS 4.1.2 | - |
| 0x90 | CI-field: authentification and fragmentation layer (AFL) | only by OMS 4.1.2 and when encryption is enabled | - |
| 0x0F | AFL: fragmentation control field | only by OMS 4.1.2 and when encryption is enabled | - |
| 0x00<br>0x2C | AFL: fragmentation control field | only by OMS 4.1.2 and when encryption is enabled<br>0x2C = Message Control field, Message Counter field and MAC included in AFL | - |
| 0xXX | AFL: Message control field | only by OMS 4.1.2 and when encryption is enabled | - |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | AFL: Message counter field | only by OMS 4.1.2 and when encryption is enabled | - |
| 0xXX<br>0xXX<br>0xXX<br>0xXX<br>0xXX<br>0xXX<br>0xXX<br>0xXX<br>0xXX | AFL: MAC | only by OMS 4.1.2 and when encryption is enabled | - |
| 0x7A | CI-field: short header | | - |

## 5.2 OMS -MIDDLE telegram in detail

Without CRC checksums, unencrypted telegrams without "0x2F" padding bytes

| Bytes | Meaning | Note | Encryption block |
|---|---|---|---|
| 0xXX | Accessnumber | | - |
| 0xXX | M-Bus status flag and error | no error = 0X00 | - |
| 0xXX<br>0xXX | Configuration field | 0x2000 = synchronous, no encryption<br>0x2540 = synchronous, encrypted Mode 5,<br>4 encryped blocks each 16 bytes long<br>0x0740 = encrypted Mode 7, 4 encrypted blocks | - |
| 0x10 | configuration field extension | only by OMS 4.1.2 and when encryption is enabled | - |
| 0x2F<br>0x2F | Padding byte or encryption confirmation | only when encryption is enabled | 1 |
| 0x04 | DIF = 32bit | | 1 |
| 0x6D | VIF = Date / Time (type F) | | 1 |
| 0xXX<br>0xXX<br>0xXX | Current date / time | Data format type F | 1 |
| 0xXX | | | - |
| 0x04 | DIF = 32bit | | 1 |
| 0x13 | VIF = volume in liters | | 1 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | current meter reading | | 1 |
| 0x02 | DIF = 16bit | | 1 |
| 0xFD | VIF = extended code table | | 1 |
| 0x17 | VIFE = error flags | | 2 |
| 0xXX<br>0xXX | Error flags | | 2 |
| 0x01 | DIF 0 8bit | | 2 |
| 0xFD | VIF = etended code tabele | | 2 |
| 0x48 | VIFE = electrical voltage in 0,1 V | | 2 |
| 0xXX | Battery voltage (average) | | 2 |
| 0x42 | DIF = 16 bit (memory number = 1) | | 2 |
| 0x6C | VIF = Date (type G) | | 2 |
| 0xXX<br>0xXX | Date of the last reporting date | | 2 |
| 0x44 | DIF = 32bit (memory number = 1) | | 2 |

## 5.2 OMS - MIDDLE telegram in detail

Without CRC checksums, unencrypted telegrams without "0x2F" padding bytes

| Bytes | Meaning | Note | Encryption block |
|---|---|---|---|
| 0x13 | Volume in liters | | 2 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading as of the last reporting date | | 2<br>2<br>2<br>3 |
| 0x84 | DIF = 32bit | Memory number = 2 (=00010b) | 3 |
| 0x01 | DIFE | Memory number = 2 (=00010b) | 3 |
| 0x13 | VIF = Volume in liters | | 3 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 1 (most recent) | | 3 |
| 0xC4 | DIF = 32bit | Memory number = 3 (=00011b) | 3 |
| 0x01 | DIFE | Memory number = 3 (=00011b) | 3 |
| 0x13 | VIF = Volume in liters | | 3 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 2 | | 3 |
| 0xC4 | DIF = 32bit | Memory number = 4 (=00100b) | 3 |
| 0x02 | DIFE | Memory number = 4 (=00100b) | 4 |
| 0x13 | VIF = Volume in liters | | 4 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 3 | | 4 |
| 0x2F<br>0x2F<br>0x2F<br>0x2F<br>0x2F<br>0x2F<br>0x2F<br>0x2F<br>0x2F | Padding bytes for a complete encryption block | only when encryption is enabled | 4 |

## 5.3 OMS - LONG telegram in detail

Without CRC checksums, unencrypted telegrams without "0x2F" padding bytes

| Bytes | Meaning | Note | Encryption block |
|---|---|---|---|
| 0xXX | L-field: length | OMS 3.0.1 unencrypted -> 0x96 (=150)<br>OMS 3.0.1 encrypted with Mode 5 -> 0x9E (=158)<br>OMS 4.1.2 unencrypted -> 0x99 (=153)<br>OMS 4.1.2 encrypted with mode 7 -> 0xB3 (=179) | - |
| 0x44 | C-field: no reply | 0x46 for installation messages | - |
| 0xFA<br>0x12 | M-field: manufacturer code | Lorenz = DWZ = 12FA | - |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | A-field: 8-digit SN | BCD encrypted | - |
| 0xXX | A-field: version / manufacturing block | | - |
| 0xXX | A-field: device typ / medium | cold water = 0x07<br>hotwater = 0x06 | - |
| 0x8C | CI-field : Extended Link Layer (ELL) | only by OMS 4.1.2 | - |
| 0x20 | ELL: CC-field | only by OMS 4.1.2<br>0x20 = syncronous | - |
| 0xXX | ELL: ACC-field | only by OMS 4.1.2 | - |
| 0x90 | CI-field: authentification and fragmentation layer (AFL) | only by OMS 4.1.2 and when encryption is enabled | - |
| 0x0F | AFL: fragmentation control field | only by OMS 4.1.2 and when encryption is enabled | - |
| 0x00<br>0x2C | AFL: fragmentation control field | only by OMS 4.1.2 and when encryption is enabled<br>0x2C = Message Control field, Message Counter field and MAC included in AFL | - |
| 0xXX | AFL: Message control field | only by OMS 4.1.2 and when encryption is enabled | - |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | AFL: Message counter field | only by OMS 4.1.2 and when encryption is enabled | - |
| 0xXX<br>0xXX<br>0xXX<br>0xXX<br>0xXX<br>0xXX<br>0xXX<br>0xXX | AFL: MAC | only by OMS 4.1.2 and when encryption is enabled | - |
| 0x7A | CI-field: short header | | - |

## 5.3 OMS - LONG telegram in detail

Without CRC checksums, unencrypted telegrams without "0x2F" padding bytes

| Bytes | Meaning | Note | Encryption block |
|---|---|---|---|
| 0xXX | Accessnumber | | - |
| 0xXX | M-Bus status flag and error | no error = 0X00 | - |
| 0xXX<br>0xXX | Configuration field | 0x2000 = synchronous, no encryption<br>0x2590 = synchronous, encrypted Mode 5,<br>9 encryped blocks each 16 bytes long<br>0x0790 = encrypted Mode 7, 9 encrypted blocks | - |
| 0x10 | configuration field extension | only by OMS 4.1.2 and when encryption is enabled | - |
| 0x2F<br>0x2F | Padding byte or encryption confirmation | only when encryption is enabled | 1 |
| 0x04 | DIF = 32bit | | 1 |
| 0x6D | VIF = Date / Time (type F) | | 1 |
| 0xXX<br>0xXX<br>0xXX | Current date / time | Data format type F | 1 |
| 0xXX | | | - |
| 0x04 | DIF = 32bit | | 1 |
| 0x13 | VIF = volume in liters | | 1 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | current meter reading | | 1 |
| 0x02 | DIF = 16bit | | 1 |
| 0xFD | VIF = extended code table | | 1 |
| 0x17 | VIFE = error flags | | 2 |
| 0xXX<br>0xXX | Error flags | | 2 |
| 0x01 | DIF 0 8bit | | 2 |
| 0xFD | VIF = etended code tabele | | 2 |
| 0x48 | VIFE = electrical voltage in 0,1 V | | 2 |
| 0xXX | Battery voltage (average) | | 2 |
| 0x42 | DIF = 16 bit (memory number = 1) | | 2 |
| 0x6C | VIF = Date (type G) | | 2 |
| 0xXX<br>0xXX | Date of the last reporting date | | 2 |
| 0x44 | DIF = 32bit (memory number = 1) | | 2 |

## 5.3 OMS - LONG telegram in detail

Without CRC checksums, unencrypted telegrams without "0x2F" padding bytes

| Bytes | Meaning | Note | Encryption block |
|---|---|---|---|
| 0x13 | Volume in liters | | 2 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading as of the last reporting date | | 2<br>2<br>2<br>3 |
| 0x84 | DIF = 32bit | Memory number = 2 (=00010b) | 3 |
| 0x01 | DIFE | Memory number = 2 (=00010b) | 3 |
| 0x13 | VIF = Volume in liters | | 3 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 1 (most recent) | | 3 |
| 0xC4 | DIF = 32bit | Memory number = 3 (=00011b) | 3 |
| 0x01 | DIFE | Memory number = 3 (=00011b) | 3 |
| 0x13 | VIF = Volume in liters | | 3 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 2 | | 3 |
| 0xC4 | DIF = 32bit | Memory number = 4 (=00100b) | 3 |
| 0x02 | DIFE | Memory number = 4 (=00100b) | 4 |
| 0x13 | VIF = Volume in liters | | 4 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 3 | | 4 |
| 0xC4 | DIF = 32bit | Memory number = 5 (=00101b) | |
| 0x02 | DIFE | Memory number = 5 (=00101b) | 4 |
| 0x13 | VIF = Volume in liters | | 4 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 4 | | 4 |

## 5.3 OMS - LONG telegram in detail

Without CRC checksums, unencrypted telegrams without "0x2F" padding bytes

| Bytes | Meaning | Note | Encryption block |
|---|---|---|---|
| 0x84 | DIF = 32bit | Memory number = 6 (=00110b) | 4 |
| 0x03 | DIFE | Memory number = 6 (=00110b) | 4 |
| 0x13 | VIF = Volume in liters | | 4 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 5 | | 5 |
| 0xC4 | DIF = 32bit | Memory number = 7 (=00111b) | 5 |
| 0x03 | DIFE | Memory number = 7 (=00111b) | 5 |
| 0x13 | VIF = Volume in liters | | 5 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 6 | | 5 |
| 0x84 | DIF = 32bit | Memory number = 8 (=01000b) | 5 |
| 0x04 | DIFE | Memory number = 8 (=01000b) | 5 |
| 0x13 | VIF = Volume in liters | | 5 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 7 | | 5<br>5<br>6<br>6 |
| 0xC4 | DIF = 32bit | Memory number = 9 (=01001b) | 6 |
| 0x04 | DIFE | Memory number = 9 (=01001b) | 6 |
| 0x13 | VIF = Volume in liters | | 6 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 8 | | 6<br>6<br>6<br>6 |
| 0x84 | DIF = 32bit | Memory number = 10 (=01010b) | 6 |
| 0x05 | DIFE | Memory number = 10 (=01010b) | 6 |
| 0x13 | VIF = Volume in liters | | 6 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 9 | | 6<br>6<br>6<br>6 |

## 5.3 OMS - LONG telegram in detail

Without CRC checksums, unencrypted telegrams without "0x2F" padding bytes

| Bytes | Meaning | Note | Encryption block |
|---|---|---|---|
| 0xC4 | DIF = 32bit | Memory number = 11 (=01011b) | 7 |
| 0x05 | DIFE | Memory number = 11 (=01011b) | 7 |
| 0x13 | VIF = Volume in liters | | 7 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 10 | | 7 |
| 0x84 | DIF = 32bit | Memory number = 12 (=01100b) | 7 |
| 0x06 | DIFE | Memory number = 12 (=01100b) | 7 |
| 0x13 | VIF = Volume in liters | | 7 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 11 | | 7 |
| 0xC4 | DIF = 32bit | Memory number = 13 (=01101b) | 7 |
| 0x06 | DIFE | Memory number = 13 (=01101b) | 7 |
| 0x13 | VIF = Volume in liters | | 8 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 12 | | 8 |
| 0x84 | DIF = 32bit | Memory number = 14 (=01110b) | 8 |
| 0x07 | DIFE | Memory number = 14 (=01110b) | 8 |
| 0x13 | VIF = Volume in liters | | 8 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 13 | | 8 |
| 0xC4 | DIF = 32bit | Memory number = 15 (=01111b) | 8 |
| 0x07 | DIFE | Memory number = 15 (=01111b) | 8 |
| 0x13 | VIF = Volume in liters | | 8 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 14 | | 8<br>9<br>9<br>9 |

## 5.3 OMS - LONG telegram in detail

Without CRC checksums, unencrypted telegrams without "0x2F" padding bytes

| Bytes | Meaning | Note | Encryption block |
|---|---|---|---|
| 0x84 | DIF = 32bit | Memory number = 16 (=01011b) | 9 |
| 0x08 | DIFE | Memory number = 16 (=01011b) | 9 |
| 0x13 | VIF = Volume in liters | | 9 |
| 0xXX<br>0xXX<br>0xXX<br>0xXX | Meter reading for month 15 | | 9 |
| 0x2F<br>0x2F<br>0x2F<br>0x2F | Padding bytes for a complete encryption block | | 9 |

## 6. Error Codes

Error codes are encoded in 2 bytes and transmitted via radio or displayed on the LCD. Their meanings are shown in the table below.
If "measurement mode is disabled", the meter must be replaced.

| Error bit | Error code in display | Error kind | Measurement mode disabled | OMS status | Note |
|---|---|---|---|---|---|
| 0 | STOP0001 | SW - Error | yes | Bit 3 = 1 (continuous) | |
| 1 | STOP0002 | CRC - Error | yes | Bit 3 = 1 (continuous) | |
| 2 | STOP0004 | Sensor - Error | yes | Bit 3 = 1 (continuous) | |
| 3 | Err 0008 | Measurement error | no | Bit 4 = 1 (temporary) | |
| 4 | Err 0010 | Battery voltage error | no | Bit 2 = 1 (temporary) | |
| 5 | STOP0020 | Manipulation | yes | Bit 3 = 1 (continuous) | |
| 6 | Err 0040 | Leakage | no | | 12h non-stop flow |
| 7 | Err 0080 | Backflow | no | | Update hourly |
| 8 | Err 0100 | Overload | no | | |

# 7. Legal notices

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