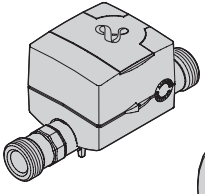
DIEHL
Metering

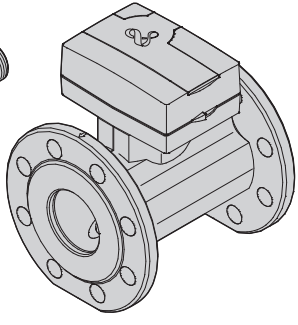
HYDRUS

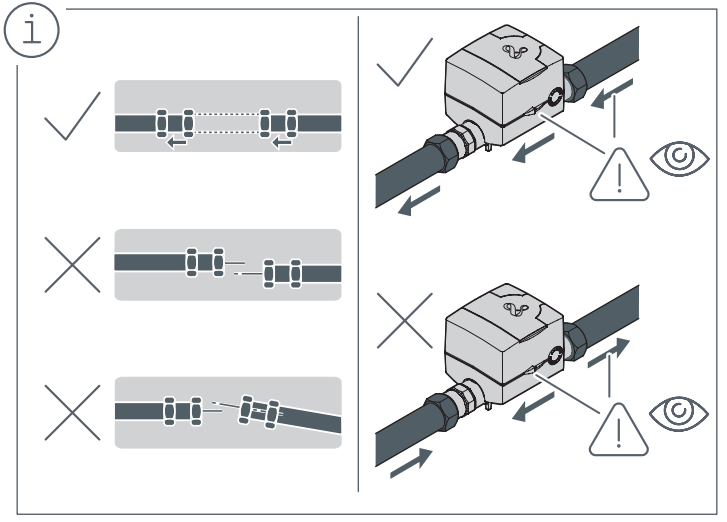
INSTALLATION GUIDE / EINBAUANLEITUNG / GUIDE D'INSTALLATION / INSTRUCCIONES DE MONTAJE / GUIA DE INSTALAÇÃO

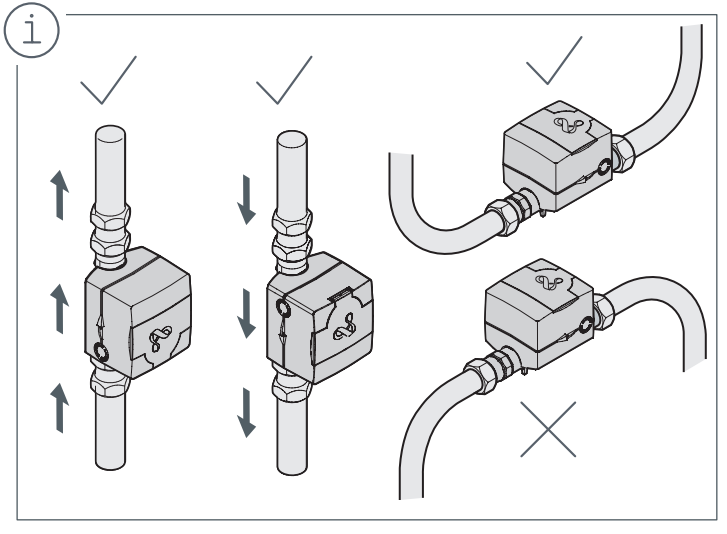
DN 15 ... 50

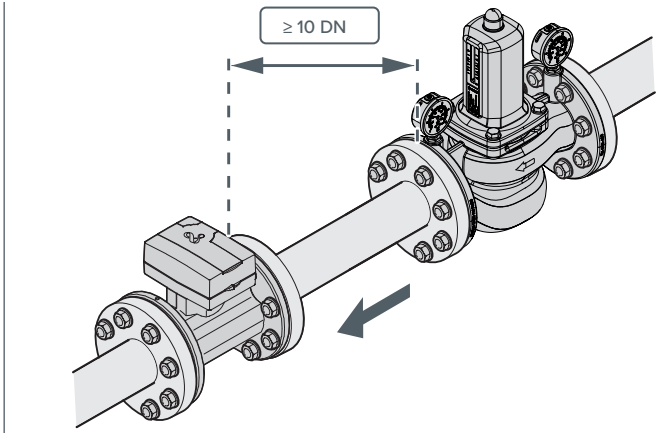


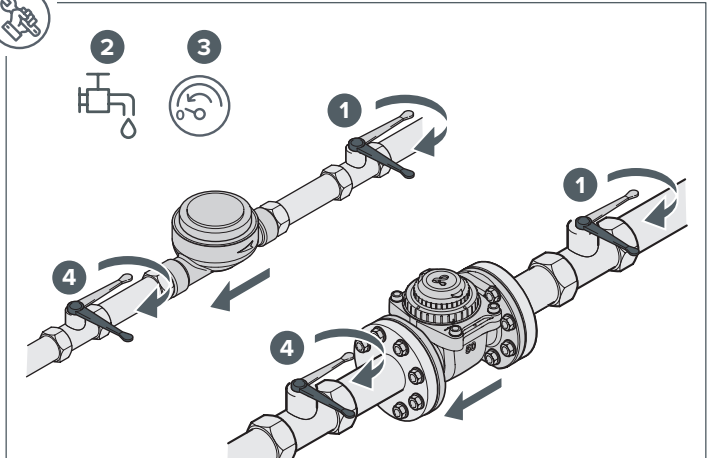
DN 50 ... 200

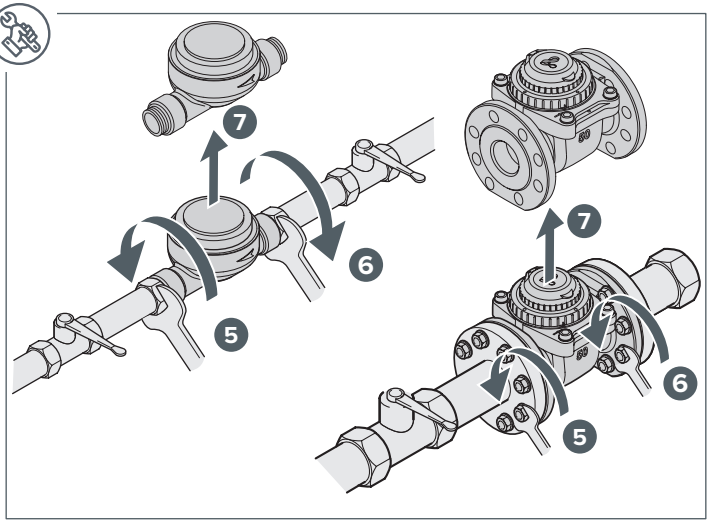


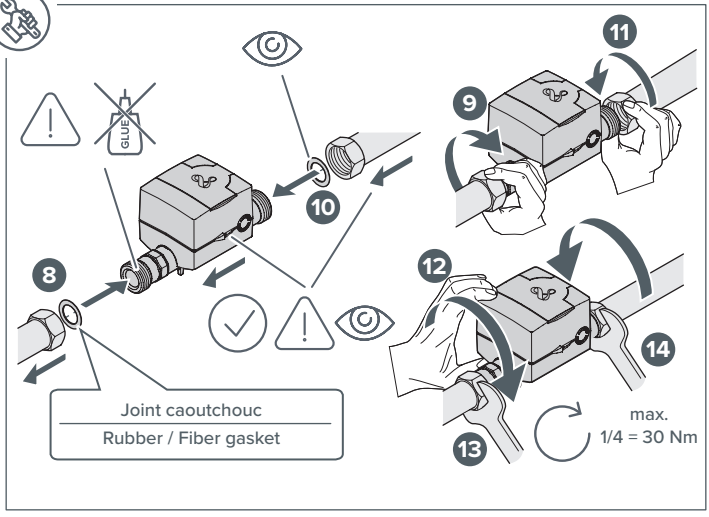


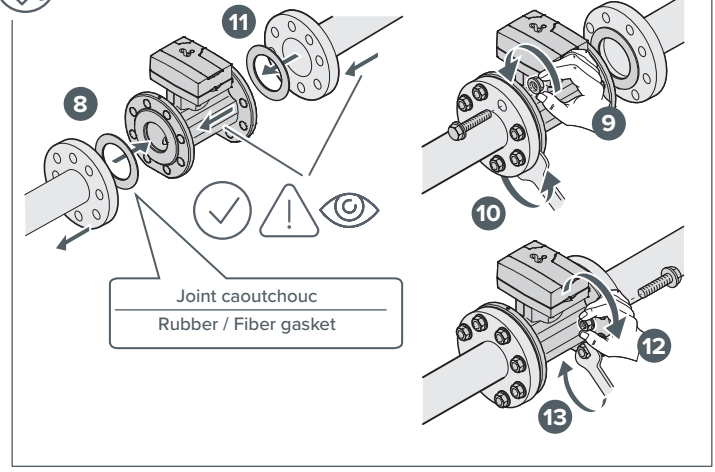


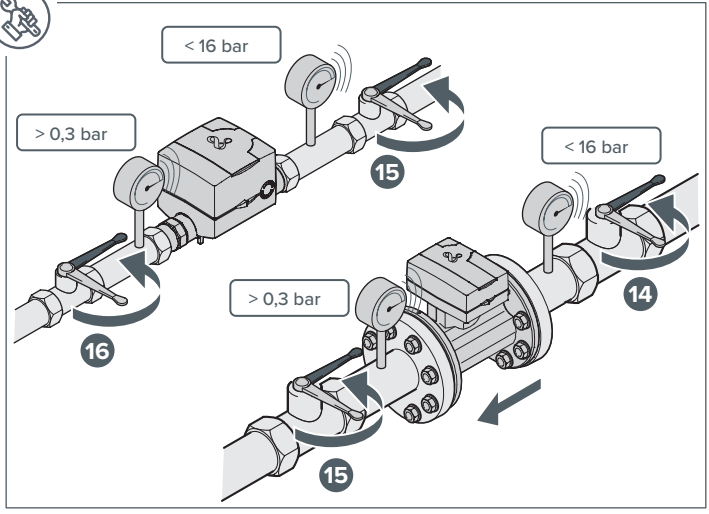

≥ 10 DN

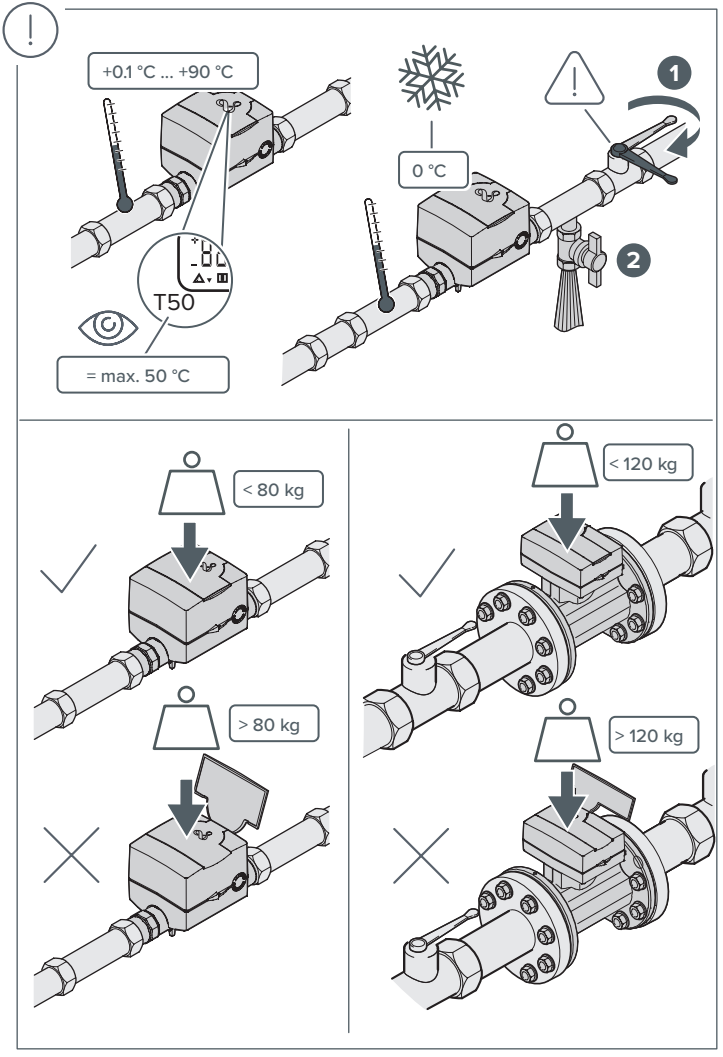

2
3
1
4
1
4

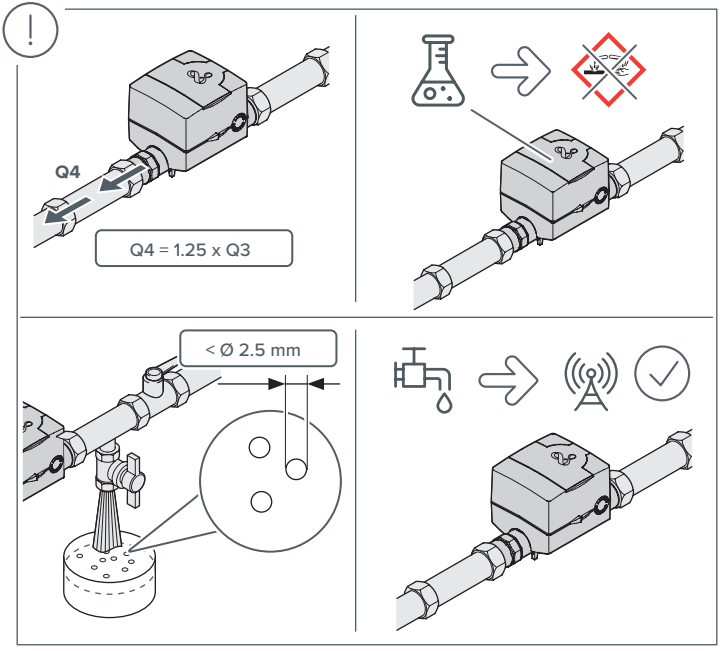

7
6
5
7
6
5

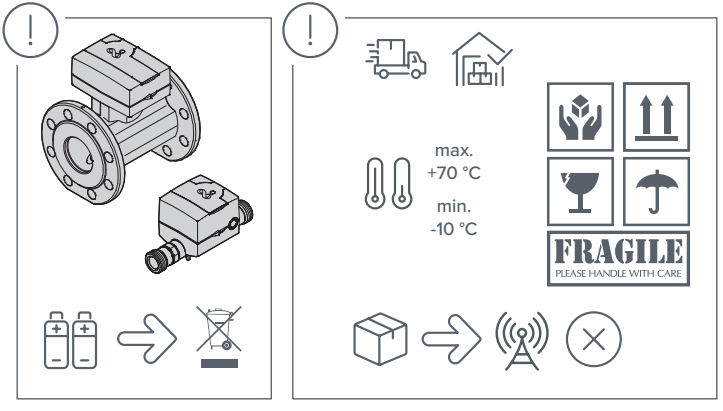

GLUE
10
11
9
8
12
14
13
Joint caoutchouc
Rubber / Fiber gasket
max.
1/4 = 30 Nm


11
8
9
10
12
13
Joint caoutchouc
Rubber / Fiber gasket


< 16 bar
> 0,3 bar
15
< 16 bar
14
> 0,3 bar
16
15


+0.1 °C ... +90 °C
T50
= max. 50 °C
0 °C
1
2
< 80 kg
> 80 kg
< 120 kg
> 120 kg


Q4
Q4 = 1.25 x Q3
< Ø 2.5 mm

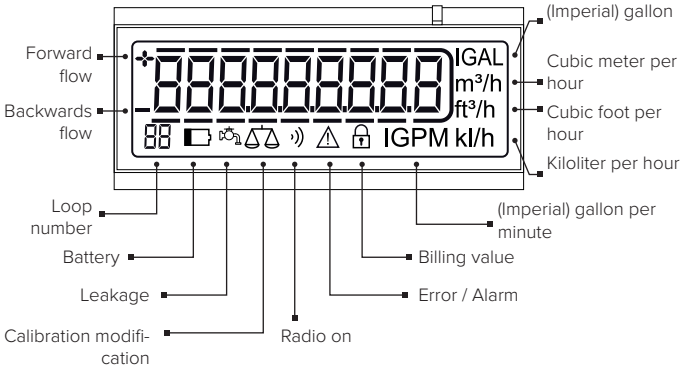

max.
+70 °C
min.
-10 °C
FRAGILE
PLEASE HANDLE WITH CARE

The data generated by the meter can be viewed in the display loop with system information (e.g. flow rate, volume, date, due date, medium temperature). The loops are numbered from 01 to 09.

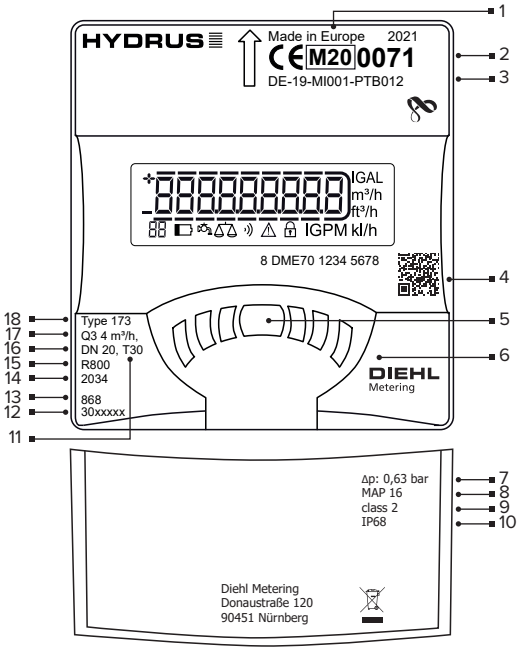
The optical button located on the front panel enables scrolling the display loops.

To save battery lifetime, the meter switches automatically to power save mode after 4 minutes of inactivity. The display is awakened again by pressing the optical button.

After awakening, the display shows first a screen check (i.e. all symbols in the display are briefly switched on and off) and then the total volume. This remains for at least 10 seconds on the display (also when the optical button is pressed). Afterwards the display loop can be switched with the help of the optical button.



Display loop			
88	Displaytest	05	Error / Alarms
01	Total volume	07	High resolution total volume
02	Battery lifetime	08	Due date / Due date volume
03	Firmware version / Checksum	09	Reverse volume
04	Current flow	10	Forward volume



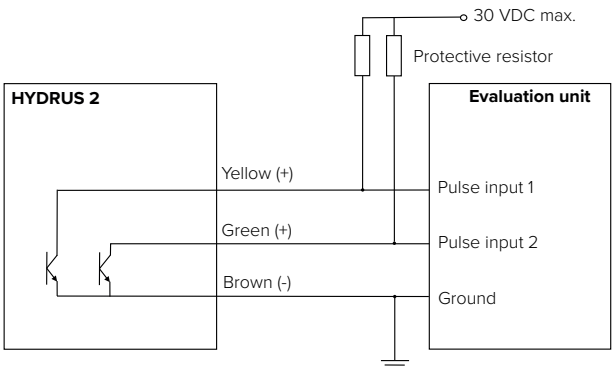
1	Conformity label	10	Protection class
2	Year of the declaration of conformity	11	Temperature class
3	Type of examinaiton certificate number	12	Product article number
4	Meter serial number & QR code	13	Communication interfaces
5	Optical button	14	Battery lifetime *
6	Positioning assistance for opto head	15	Dynamic range
7	Pressure loss class	16	Nominal diameter
8	Maximum admissible pressure	17	Permanent flow rate
9	Metrological class	18	Type

* The meter has an option to show the battery lifetime on the display. When shown on display as well as printed on the faceplate, the displayed value should be considered in case of discrepancy. If it is only printed on faceplate, this value is considered.

Pulse outputs (open drain)

Input voltage	max. 30 V
Input current	max. 27 mA
Voltage drop at the active output	max. 2 V / 27 mA
Current through inactive output	max. 5 µA / 30 V
Reverse current	max. 27 mA
Pulse duration, pulse break, pulse frequency	depending on device configuration (detailed description on request)

Connection diagram for passive evaluation devices (e.g. PLC)



The pulse outputs of the HYDRUS are wired as open-drain, i.e. there is no current limitation internally in the meter. In order to assure functional reliability, a protective resistor is absolutely necessary for each pulse output, taking into account the input voltage (maximum 30 V) and the input current (maximum 27 mA).

Example of calculating the protective resistor of a standard PLC with 24 VDC and input current 24 mA:
R= U/I = 24 V / 24 mA = 1 kOhm

Cable pin assignment

The Radio/L-Bus/Pulse, Pulse/Pulse and M-Bus/Pulse/Pulse versions of the meter are supplied with a 1.5 m 2/3/4/5-wire connecting cable with wire end ferrules.

	Radio/L-Bus/Pulse	Pulse/Pulse	M-Bus/Pulse/Pulse	M-Bus	4-Wire Pulse
M-Bus			x	x	
Pulse, Output 1		x	x		x
Pulse, Output 2	x	x	x		x
L-Bus	x				
Connection (network name)					
GND	brown	brown	brown		brown
Pulse 1 or L-Bus	yellow	yellow	yellow		white
Pulse 2	green	green	green		yellow
M-Bus 1			white	white	
M-Bus 2			blue	blue	
Manipulation / Tampering					green
Number of Wires	3	3	5	2	4



Never connect the external M-Bus to the pulse output of the meter! It will destroy the pulse output and lead to the loss of all factory warranty claims.

Radio specifications

Sending intervals	Every 14 ... 256 seconds (variable, according to 0.1 duty cycle (min. 14 seconds); depending on protocol length and programming)
434 MHz frequency band	Transmission power (EN 300 220-2 V3.2.1): 10 mW e.r.p.
868 MHz frequency band	Transmission power (EN 300 220-2 V3.2.1): 25 mW e.r.p

Venting



In the event that complete venting of the meter is not possible, please install the meter at an angle of 45°!

Open Source Software Notice

This product contains open source software components.

The use and distribution of any open source software is governed by respective terms and conditions of the applicable open source license. By using this product, you acknowledge that you have reviewed such license terms and notices, and you agree to be obliged by these terms.

Please insure that you get yourself familiar with the licenses terms and conditions before using this product. The complete license terms are available in the DIEHL Metering Download-center:

https://www.diehl.com/metering/en/support-center/download-center/

If you have any questions regarding open source software used in this product, please contact DIEHL Metering support:

oss-dmde@diehl.com

DIEHL
Metering

STATEMENT OF COMPLIANCE IN ACCORDANCE WITH THE PRODUCT SECURITY AND TELECOMMUNICATIONS INFRASTRUCTURE ACT 2022 AND THE PRODUCT SECURITY AND TELECOMMUNICATIONS INFRASTRUCTURE (SECURITY REQUIREMENTS FOR RELEVANT CONNECTABLE PRODUCTS) REGULATIONS 2023 ("PSTI REGS")

Instrument model / Instrument	Object of the declaration
173	HYDRUS 2.0 (Ultrasonic water meter)

1. The product described above complies with the relevant security requirements specified in Schedule 1 of the PSTI Regs.
2. Factory default state: not applicable
3. Defined support period for the product current from the date of supply of the product: please see product warranty information. The firmware of the product cannot be altered. The software in the product is not able to be updated or supported via over-the-air updates.
   Please note that defined support period stated herein, is only applicable to products sold in the UK.
4. Contact point for the reporting of any security issues with the product described above:
   please contact us at: metering-uk-sales@diehl.com

Name and address of the manufacturer	DIEHL METERING Donaustraße 120 90451 Nürnberg GERMANY

Nürnberg, 2025-03-20

Dr. Christof Bosbach
President of the Division Board
Diehl Metering

Reiner Edel
Member of the Division Board
Finance & Administration

DIEHL
Metering

UK Declaration of Conformity

1. Instrument model/instrument:

   Hydrus Type 174

2. Name and address of the manufacturer:

   Diehl Metering
   Donaustrasse 120
   90451 Nürnberg
   Germany

3. This declaration of conformity is issued under the sole responsibility of the manufacturer.

4. Object of the declaration:

   Ultrasonic Water Meter HYDRUS

5. The object of the declaration described above is in conformity with the relevant UK statutory requirements:

2016 No. 1091	The Electromagnetic Compatibility Regulations 2016 with Amendments
2016 No. 1153	The Measuring Instruments Regulations 2016 with Amendments
2017 No. 1206	The Radio Equipment Regulations 2017 with Amendments
2012 No. 3032	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 with Amendments

6. References to the relevant designated standards or normative documents used or references to the other technical specifications in relation to which conformity is declared:

EN 55032:2015/A11:2020	EN ISO 4064-3:2014	EN 301 489-1 v2.1.1
EN 14154-1:2005/A2:2011	EN ISO 4064-5:2017	EN 301 489-3 v2.1.1
EN 14154-2:2005/A2:2011	OIML R49-1:2006	EN 300 220-2 v3.1.1
EN 14154-3:2005/A2:2011	OIML R49-2:2004	EN 62368-1:2014/AC:2015
EN ISO 4064-1:2017	EN 62479:2010	EN IEC 63000:2018
EN ISO 4064-2:2017	EN 62311:2008	

7. The approved body NMO, Approved Body number 0126, performed type examination and issued the type examination certificate UK/0126/0325.
   The approved body LNE-GMED UK., Approved Body number UKAB N° 8521, performed quality assurance of the production process and issued the certificate: N° UKCA- 39079 rev. 0

Signed for and on behalf of:

Christof Bosbach (Jun 14, 2023 14:54 GMT+2) — Reiner Edel (Jun 14, 2023 07:55 GMT+2)

Nürnberg, 2023-07-06

Dr. Christof Bosbach
President of the Division Board
Diehl Metering

Reiner Edel
Member of the Division Board
Finance & Administration