HYDRUS 2.0

ULTRASONIC METER

DIEHL
Metering



APPLICATION

HYDRUS 2.0 is a static ultrasonic water meter designed for all applications of domestic cold water supply enabling accurate measuring with long-term stability under difficult conditions (no measurement of air and insensitive to sedimentation). Developed within the framework of the MID, it complies with the European regulations and holds sanitary conformity certificates (AoC DEU, ACS, WRAS and others). The integrated communication function supports meter data provision via mobile reading (walk-by/drive-by/passive drive-by) or fixed network (upgrade without on-site configuration). In combination with Diehl Metering's IZAR fixed network system, which stands out with excellent coverage, high data granularity and timeliness will be maintained. This is what makes it a high responsive infrastructure to take actions immediately.
The meter offers integrated mioty® for Metering or LoRaWAN® for fixed network reading over private/public networks.

FEATURES

- DN 15 to 50
- MID approved with dynamic range up to R 800
- IP 68 suitable for outdoor installations
- Integrated radio communication based on Open Metering telegram
- OMS over LoRaWAN® for fixed network with wM-Bus for mobile reading
- mioty® for Metering for fixed network with wM-Bus for mobile reading
- M-Bus/Pulse/Pulse, wM-Bus, wM-Bus along with L-Bus/Pulse
- Display with error and alarm codes including leakage detection
- Battery lifetime up to 16 years
- U0 / D0, no need for calming sections

HYDRUS 2.0

ULTRASONIC METER

GENERAL

			HYDRUS 2.0
Medium temperature range		°C	+0.1 ... +90
Ambient operating temperature		°C	-10 ... +55
Ambient storage temperature		°C	-10 ... +70 (>35 °C max. 4 weeks)
Environmental class			O (Outdoors)
Mechanical environmental class			M2
Electromagnetic environmental class			E2
Housing material			With thread connection: CW724R (lead-free); with flange connection: CC770S
Nominal pressure	PN	bar	16
Power supply			Two 3.6 VDC lithium batteries
Battery lifetime T30[1]/T50[1]			Up to 16 years
Battery lifetime T70[1]/T90[1]			Up to 16 years
Communication interfaces			Optical, OMS wM-Bus / Long range radio (R4, R4+, mioty® for Metering) 434 or 868 MHz, M-Bus, L-Bus and Pulse, LoRaWAN® 868 MHz
Data storage			For errors, alarms and measuring values, data logging capabilities to record up to 1024 daily values +32 monthly values and two annual due dates
Protection class			IP 68

[1] Depends on the sending interval of the radio telegram, the telegram length and the ambient temperature at the installation

TECHNICAL DATA DISPLAY

	HYDRUS 2.0
Display indication	LCD, 9-digit, additional symbols/display counter/unit
Units displayed DN 15 - DN 50	Volume (m^3 + 3 decimal places) and flow rate (m^3/h + 3 decimal places)
Values displayed	Display test - volume - battery lifetime - firmware version - software checksum - flow - current/ continuous/historical error - alarm status - high resolution volume - due date - due date volume - reverse volume - display counter - low battery indication - leakage indication - metrological log access - radio signal ON/OFF - alarm indication - billing value indication - and more display loop options to choose from.

INTERFACES - OVERVIEW

	HYDRUS 2.0
Optical	For switching the display loop and configuring / reading the meter via IZAR@MOBILE
wMBus (R3)	434 or 868 MHz, Open Metering radio as standard (R3) for mobile reading sent every 14 / 64 seconds (default)
Long range radio R4 / R4+ / mioty® for Metering	434 or 868 MHz, OMS for fixed network sent every 5 / 15 / 60 minutes
LoRaWAN®	868 MHz - OMS over LoRaWAN® for fixed network sent every 3 h / 5 h / 6 h (default) and OMS wM-Bus for mobile network sent every 64s (default); Complies to v1.0.3, certified to v1.0.2, Class A, supports Adaptive data rate (ADR)
M-Bus	2400 baud, cable length 1.5 m, power supply only via built-in battery - can be combined with two Pulse outputs
L-Bus	In combination with radio, cable length 1.5 m (only one interface communicating at the same time)
Pulse (Open drain)	Two Pulse outputs, or one Pulse and one L-Bus output, Pulse cable length 1.5 m

SECURITY

	HYDRUS 2.0
wM-Bus (R3), R4, R4+, mioty® for Metering	OMS Generation 3 or OMS Generation 4 Profile B, selectable
LoRaWAN®	Fixed Network uses internal LoRaWAN® transport encryption; Mobile Network uses OMS Generation 4 Profile B Individual keys

Diehl Metering GmbH · Industriestrasse 13 · 91522 Ansbach · Germany
Phone: +49 981 1806-0 · Fax: +49 981 1806-615 · metering-germany-info@diehl.com · www.diehl.com/metering
Subject to technical adjustments

HYDRUS 2.0
ULTRASONIC METER

PRIVACY

The HYDRUS 2.0 saves 1024 consumption values with a daily interval. This data can be read locally and accessed only by using the IZAR@MOBILE. As a second logging, a small amount of 32 consumption values can be stored. The HYDRUS 2.0 has a minimal sending interval of about 14 seconds and uses the OMS Generation 3 (not available with radio meters with C1 mobile mode or LoRaWAN®/C2) or 4, Profile B security level. Both, the radio protocol and the optical interface are encrypted by default.

VOLUME / PULSE OPEN DRAIN

		HYDRUS 2.0
Max. input voltage	V	30
Max. input current	mA	27
Max. voltage drop at active output	V/mA	2/27
Max. current through inactive output	µA/V	5/30
Max. reverse voltage without destroying outputs	V	6 (in case current does not exceed 27 mA)
Pulse rates	l/pulse	Decadic 1 / 10 (depending on nominal diameter)
Pulse output 1 variants		Total volume or forward volume
Pulse output 2 variants		Flow direction or error, reverse volume
Pulse frequency		Max. frequency 10 Hz
Pulse width		50 - 125 ms

POSSIBLE COMMUNICATION INTERFACES

	HYDRUS 2.0
wM-Bus/Pulse/L-Bus	3 wire
wM-Bus only	without wire
R4 / R4+ / mioty® for Metering	without wire
LoRaWAN® and OMS radio	without wire
M-Bus only	2 wire
M-Bus/Pulse/Pulse	5 wire
Pulse/Pulse	3 wire

REACH

Information pursuant to Article 33 (1) of Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006:
This product series contains components with the following substances in a concentration of more than 0.1% weight by weight (w/w):
- Lead (only for the flange variants) - (CAS no.: 7439-92-1)
- Lead titanium zirconium oxide (CAS no.: 12626-81-2)

Diehl Metering GmbH · Industriestrasse 13 · 91522 Ansbach · Germany
Phone: +49 981 1806-0 · Fax: +49 981 1806-615 · metering-germany-info@diehl.com · www.diehl.com/metering
Subject to technical adjustments

HYDRUS 2.0 DN 15 - 20

ULTRASONIC METER

TECHNICAL DATA

Nominal diameter	DN	mm	15	15	20[3]	20	20
Permanent flow rate	Q_3	m^3/h	2.5	2.5	2.5	2.5	2.5
Overall length	L	mm	110	165	105	130	190
Dynamic (Q_3/Q_1)	R		800	800	400	800	800
Overload flow rate	Q_4	m^3/h	3.125	3.125	3.125	3.125	3.125
Transitional flow rate	Q_2	l/h	5	5	10	5	5
Minimum flow rate	Q_1	l/h	3.13	3.13	6.25	3.13	3.13
Starting flow rate		l/h	1.4	1.4	1.4	1.4	1.4
Pressure loss at Q_3		bar	0.46	0.46	0.16	0.4	0.4
Pressure loss at Q_4		bar	0.72	0.72	0.25	0.63	0.63
Maximum flow rate[2]	Q_{high}	m^3/h	4.37	4.37	7	4.37	4.37
Flow rate at ΔP = 1 bar			3.69	3.69	6.3	3.95	3.95

Nominal diameter	DN	mm	20[4]	20	20	20
Permanent flow rate	Q_3	m^3/h	4	4	4	4
Overall length	L	mm	105	130	165	190
Dynamic (Q_3/Q_1)	R		400	800	800	800
Overload flow rate	Q_4	m^3/h	5	5	5	5
Transitional flow rate	Q_2	l/h	16	8	8	8
Minimum flow rate	Q_1	l/h	10	5	5	5
Starting flow rate		l/h	3.0	2.5	2.5	2.5
Pressure loss at Q_3		bar	0.55	0.4	0.4	0.4
Pressure loss at Q_4		bar	0.86	0.63	0.63	0.63
Maximum flow rate[2]	Q_{high}	m^3/h	7	7	7	7
Flow rate at ΔP = 1 bar			5.39	5.39	5.39	5.39

[2] Outlet pressure minimum 3 bar, maximum 100 hours per year, closed pipeline network
[3] Available with non-return valve
[4] Only available without non-return valve

APPROVAL

		DN 15 - 20
Approval		MID DE-19-MI001-PTB012
Dynamic range (Q_3/Q_1)	R	Up to 800
Standards		EN 4064, EN 14154, OIML R49
Sanitary conformity		AoC DEU, ACS, WRAS, Belgaqua, KIWA Netherlands, OTH, PZH, SVGW
LoRaWAN® certification		1.0.2

DYNAMIC RANGE (R=Q3/Q1)

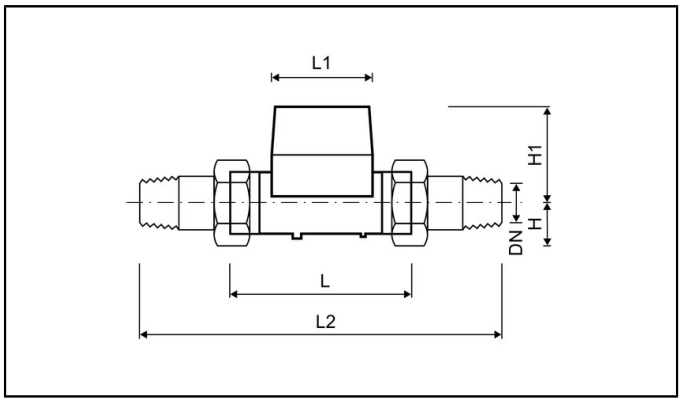
		DN 15 - 20
Q_3 2.5 m^3/h - T30 / T50	R	160; 800 (400 for L 115 mm)
Q_3 2.5 m^3/h - T70 / T90	R	160; 400; 800H / 400 V (250 for L 115 mm)
Q_3 4 m^3/h - T30	R	160; 400; 800 (630 for L 105 mm and 115 mm)
Q_3 4 m^3/h - T50 / T70 / T90	R	160; 400; 800H / 400V (630H for L 105 mm and 115 mm)

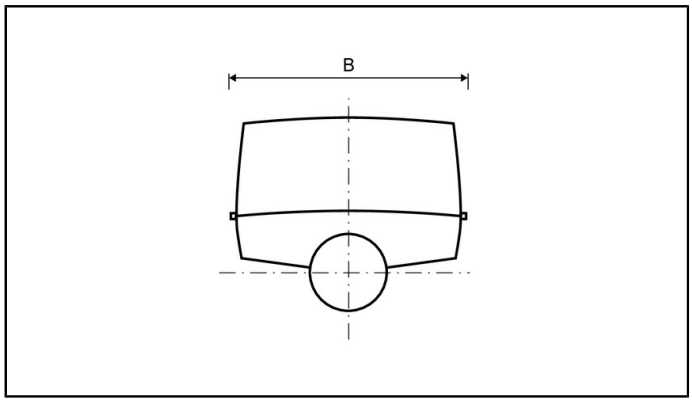
Diehl Metering GmbH · Industriestrasse 13 · 91522 Ansbach · Germany
Phone: +49 981 1806-0 · Fax: +49 981 1806-615 · metering-germany-info@diehl.com · www.diehl.com/metering
Subject to technical adjustments

HYDRUS 2.0 DN 15 - 20

ULTRASONIC METER

DIMENSIONS



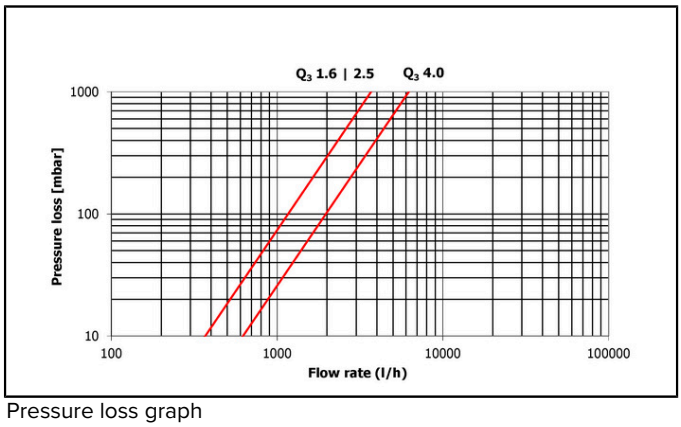


Nominal diameter	DN	mm	15	15	20[3]	20	20
Permanent flow rate	Q_3	m^3/h	2.5	2.5	2.5	2.5	2.5
Overall length	L	mm	110	165	105	130	190
Counter length	L1	mm	89	89	89	89	89
Counter width	B	mm	89	89	89	89	89
Overall length with coupling	L2	mm	190	245	205	230	290
Connection thread on meter		Inch	G¾B	G¾B	G1B	G1B	G1B
Connection thread of coupling		Inch	R½	R½	R¾[5]	R¾	R¾
Height	H1	mm	71	71	74	74	74
Weight without coupling (approx.)		kg	0.7	0.8	0.8	0.8	0.9
Weight with coupling (approx.)		kg	1.1	1.2	1.2	1.2	1.3
Height	H	mm	18	18	21	21	21

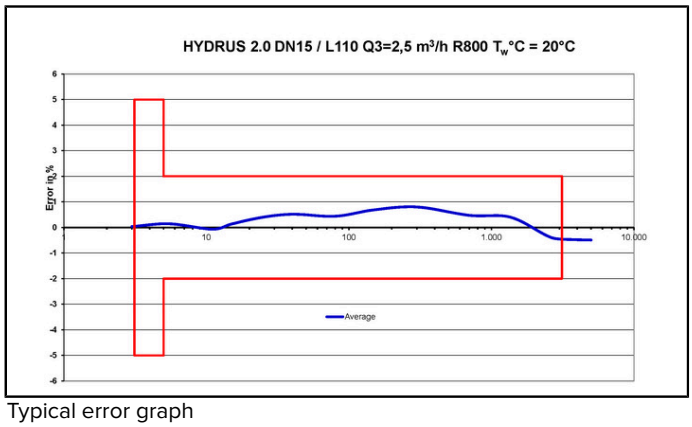
Nominal diameter	DN	mm	20[4]	20	20	20
Permanent flow rate	Q_3	m^3/h	4	4	4	4
Overall length	L	mm	105	130	165	190
Counter length	L1	mm	89	89	89	89
Counter width	B	mm	89	89	89	89
Overall length with coupling	L2	mm	205	230	295	290
Connection thread on meter		Inch	G1B	G1B	G1¼B	G1B
Connection thread of coupling		Inch	R¾[5]	R¾	R1	R¾
Height	H1	mm	74	74	74	74
Weight without coupling (approx.)		kg	0.8	0.8	1.0	0.9
Weight with coupling (approx.)		kg	1.2	1.2	1.6	1.3
Height	H	mm	21	21	27	21

[5] Wrench size should not be bigger than 38 mm

PRESSURE LOSS GRAPH / TYPICAL ERROR GRAPH



Pressure loss graph



Typical error graph

Diehl Metering GmbH · Industriestrasse 13 · 91522 Ansbach · Germany
Phone: +49 981 1806-0 · Fax: +49 981 1806-615 · metering-germany-info@diehl.com · www.diehl.com/metering
Subject to technical adjustments

HYDRUS 2.0 DN 25 - 50

ULTRASONIC METER

TECHNICAL DATA

Nominal diameter	DN	mm	25	25	25	25	25	32	40
Permanent flow rate	Q_3	m^3/h	6.3	6.3	6.3	10	10	10	10
Overall length	L	mm	135	150	260	150	260	260	200
Dynamic (Q_3/Q_1)	R		400	400	400	800	800	800	400
Overload flow rate	Q_4	m^3/h	7.87	7.87	7.87	12.5	12.5	12.5	12.5
Transitional flow rate	Q_2	l/h	25.2	25.2	25.2	20	20	20	40
Minimum flow rate	Q_1	l/h	15.8	15.8	15.8	12.5	12.5	12.5	25
Starting flow rate		l/h	5	5	5	5	5	5	8.7
Pressure loss at Q_3		bar	0.22	0.22	0.22	0.54	0.54	0.33	0.22
Pressure loss at Q_4		bar	0.34	0.34	0.34	0.84	0.84	0.53	0.34
Maximum flow rate[2]	Q_{high}	m^3/h	11.02	11.02	11.02	17.5	17.5	17.5	17.5
Flow rate at ΔP = 1 bar			13.43	13.43	13.43	13.43	13.43	10.95	21.32

Nominal diameter	DN	mm	40	40	40	50	50	50	50
Permanent flow rate	Q_3	m^3/h	10	16	16	16	16	25	25
Overall length	L	mm	300	200	300	270	300	270	300
Dynamic (Q_3/Q_1)	R		400	800	800	250	250	400	400
Overload flow rate	Q_4	m^3/h	12.5	20	20	20	20	31.25	31.25
Transitional flow rate	Q_2	l/h	40	32	32	102	102	100	100
Minimum flow rate	Q_1	l/h	25	20	20	64	64	62.5	62.5
Starting flow rate		l/h	8.7	8.7	8.7	25	25	25	25
Pressure loss at Q_3		bar	0.22	0.2	0.2	0.14	0.14	0.33	0.33
Pressure loss at Q_4		bar	0.34	0.31	0.31	0.22	0.22	0.52	0.52
Maximum flow rate[2]	Q_{high}	m^3/h	17.5	28	28	32.13	32.13	32.13	32.13
Flow rate at ΔP = 1 bar			21.32	36.0	36.0	44.0	44.0	44.0	44.0

[2] Outlet pressure minimum 3 bar, maximum 100 hours per year, closed pipeline network

APPROVAL

		DN 25 - 50
Approval		MID DE-19-MI001-PTB012
Dynamic range (Q_3/Q_1)	R	Up to 800
Standards		EN 4064, EN 14154, OIML R49
Sanitary conformity		AoC DEU, ACS, WRAS, Belgaqua, KIWA Netherlands, OTH, PZH, SVGW
LoRaWAN® certification		1.0.2

DYNAMIC RANGE (R=Q3/Q1)

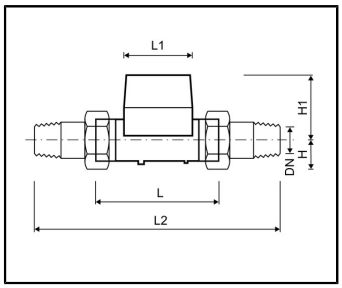
		DN 25 - 50
Q_3 6.3 m^3/h - T30	R	160; 400
Q_3 6.3 m^3/h - T50 / T70 / T90	R	160; 400H / 250V
Q_3 10 m^3/h - DN 25, DN 32 - T30	R	160; 400; 800
Q_3 10 m^3/h - DN 25, DN 32 - T50 / T70 / T90	R	160; 400; 800H / 400V
Q_3 16 m^3/h - DN 40 - T30	R	160; 400; 800
Q_3 16 m^3/h - DN 40 - T50 / T70 / T90	R	160; 400; 800H / 400 V
Q_3 16 m^3/h - DN 50	R	250
Q_3 25 m^3/h - DN 50	R	400

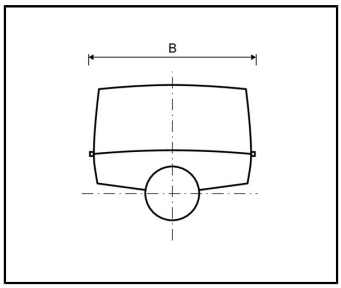
Diehl Metering GmbH · Industriestrasse 13 · 91522 Ansbach · Germany
Phone: +49 981 1806-0 · Fax: +49 981 1806-615 · metering-germany-info@diehl.com · www.diehl.com/metering
Subject to technical adjustments

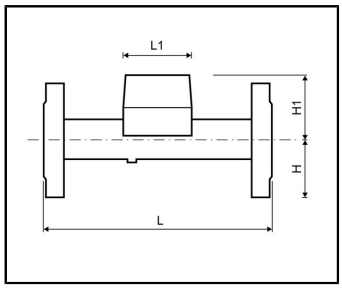
HYDRUS 2.0 DN 25 - 50

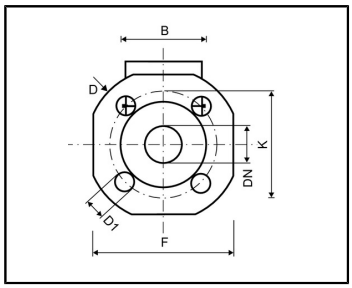
ULTRASONIC METER

DIMENSIONS





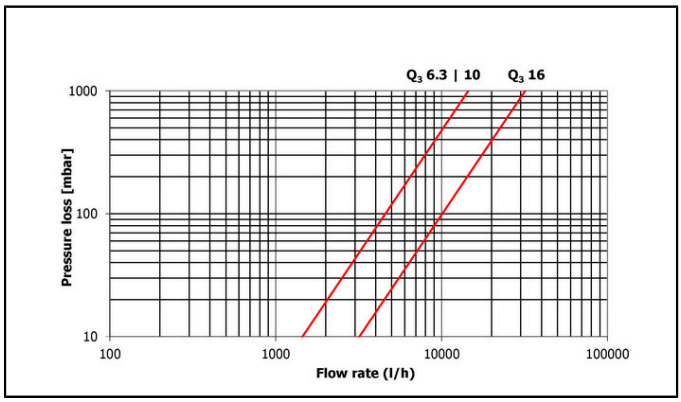




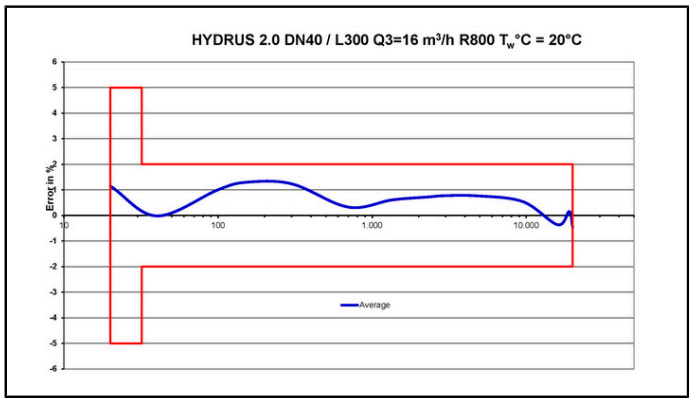
Nominal diameter	DN	mm	25	25	25	25	25	32	40
Permanent flow rate	Q_3	m^3/h	6.3	6.3	6.3	10	10	10	10
Overall length	L	mm	135	150	260	150	260	260	200
Counter length	L1	mm	89	89	89	89	89	89	96
Counter width	B	mm	89	89	89	89	89	89	89
DIMENSIONS - THREAD			.	.	.	.	.	.	.
Overall length with coupling	L2	mm	255	270	380	270	380	380	340
Connection thread on meter		Inch	G1¼B	G1¼B	G1¼B	G1¼B	G1¼B	G1½B	G2B
Connection thread of coupling		Inch	R1	R1	R1	R1	R1	R1¼	R1½
Height	H1	mm	78	78	78	78	78	78	82
Weight without coupling (approx.)		kg	1.0	1.0	1.4	1.0	1.4	1.5	1.8
Weight with coupling (approx.)		kg	1.6	1.6	2.0	1.6	2.0	2.1	3.0
Height	H	mm	27	27	27	27	27	30	36
DIMENSIONS - FLANGE			.	.	.	.	.	.	.
Flange diameter	D	mm	-	-	115	-	115	140	-
Hole circle diameter	K	mm	-	-	85	-	85	100	-
Number of screwholes		pcs	-	-	4	-	4	4	-
Screwhole diameter	D1	mm	-	-	14	-	14	18	-
Height	H	mm	-	-	50	-	50	62.5	-
Height	H1	mm	-	-	84	-	84	84	-
Width	F	mm	-	-	100	-	100	125	-
Weight with flanges (approx.)		kg	-	-	3.4	-	3.4	4.6	-

Nominal diameter	DN	mm	40	40	40	50	50	50	50
Permanent flow rate	Q_3	m^3/h	10	16	16	16	16	25	25
Overall length	L	mm	300	200	300	270	300	270	300
Counter length	L1	mm	96	96	96	92	92	92	92
Counter width	B	mm	89	89	89	94	94	94	94
DIMENSIONS - THREAD			.	.	.	.	.	.	.
Overall length with coupling	L2	mm	440	340	440	390	420	390	420
Connection thread on meter		Inch	G2B	G2B	G2B	G2½B	G2½B	G2½B	G2½B
Connection thread of coupling		Inch	R1½	R1½	R1½	R2	R2	R2	R2
Height	H1	mm	82	82	82	90	90	90	90
Weight without coupling (approx.)		kg	2.6	1.8	2.6	3.9	4.05	3.9	4.05
Weight with coupling (approx.)		kg	3.8	3.0	3.8	5.5	5.65	5.5	5.65
Height	H	mm	36	36	36	41	41	41	41
DIMENSIONS - FLANGE			.	.	.	.	.	.	.
Flange diameter	D	mm	148	-	148	-	-	-	-
Hole circle diameter	K	mm	110	-	110	-	-	-	-
Number of screwholes		pcs	4	-	4	-	-	-	-
Screwhole diameter	D1	mm	18	-	18	-	-	-	-
Height	H	mm	69	-	69	-	-	-	-
Height	H1	mm	87	-	87	-	-	-	-
Width	F	mm	138	-	138	-	-	-	-
Weight with flanges (approx.)		kg	6.3	-	6.3	-	-	-	-

PRESSURE LOSS GRAPH / TYPICAL ERROR GRAPH



Pressure loss graph



Typical error graph

DIEHL
Metering

HYDRUS 2.0 BULK

ULTRASONIC WATER METER USA



APPLICATION

HYDRUS BULK is a static, ultrasonic water meter designed for highly accurate measurement of water. It's unique design ensures no measurement of air, is insensitive to sedimentation, and allows for long-term stability, even under the most difficult conditions.

FEATURES

- Sizes 2" - 8"
- Extreme low-flow accuracy and long-term measurement stability
- Meets or exceeds C715 AWWA/ANSI Standards for type I and type II meters
- Complies with NSF/ANSI Standards 61, Annex F/G as well as FCC part 15 B
- Certified compliance to UL 327B and FM 1044 for fire service applications
- Battery life of up to 20 years
- Cast iron, epoxy coated body
- IP68
- Installation in any position, no calming sections required
- Diehl extended encoder protocol that includes temperature, alarms and error messages, etc.
- 42 days of hourly data storage

TECHNICAL DATA

		HYDRUS 2.0 BULK
Water temperature	°F	33 ... 122
Ambient operating temperature	°F	14 ... 131
Ambient storage temperature	°F	14 ... 158 (>95°F max. for up to 4 weeks)
Maximum operating pressure	psi	175
Mimimum operating pressure	psi	5
Power supply		3.6 VDC lithium battery
Battery lifetime		up to 20 years
Encoder interface		9 digit programmable resolution industry standard encoder protocol, ASCII output for compatibility with all AMR/AMI systems, Diehl Extendend protocol is available
Data storage		Alarms and consumption values (42 days of hourly data)
Protection class		IP68

TECHNICAL DATA DISPLAY

	HYDRUS 2.0 BULK
Display indication	LCD, 9-digit, additional symbols/display counter/unit
Units	Flow and volume (GPM, gal, ft^3)
Values displayed	Display test - total volume - firmware version / checksum - current flow - errors / alarms (Additional values based on configuration)
Alarms	Hardware flow - leak detection - backflow - air in pipe - low battery - undersized meter - no consumption - high temperature - freezing risk

APPROVAL

	HYDRUS 2.0 BULK
NSF	Complies with NSF/ANSI Standard 61, Annex F/G
AWWA	Meets or exceeds applicable sections of the AWWA/ANSI C715 Standards
FCC	Complies with FCC part 15 B
FM	Approved to FM1044 for fire service meters
UL	Listed to UL327B for fire service applications

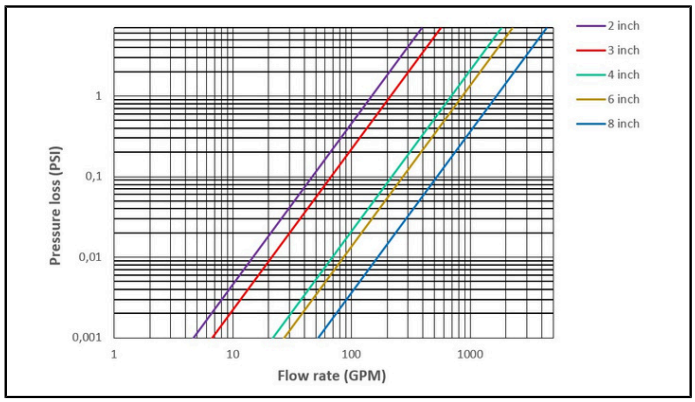
MATERIAL

	HYDRUS 2.0 BULK
Body	Cast iron, epoxy coated
Register housing	Engineered polymer
Transducers	Composite

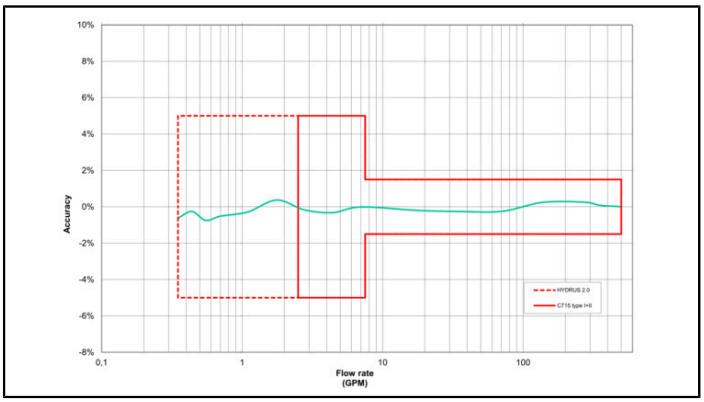
PERFORMANCE DATA

Size		2"	3"	4"	6"	8"
Operating flow range	gpm	2.5 - 250	7.5 - 500	10 - 1000	20 - 1900	40 - 2800
Low Flow range	gpm	0.2 - 2.5	0.35 - 7.5	0.65 - 10	1.37 - 20	2.75 - 40
Starting flow	gpm	0.141	0.317	0.484	0.660	0.969
Save maximum operating capacity (SMOC) at normal operation	gpm	250	500	1000	1900	2800
Save maximum operating capacity (SMOC) at fire service	gpm	250	400	1000	1600	2800
Pressure loss at SMOC normal operation	psi	2.8	5.5	2.1	4.8	2.8
Pressure loss at SMOC fire service	psi	2.8	3.5	2.1	3.4	2.8

PRESSURE LOSS GRAPH / ACCURACY CURVE

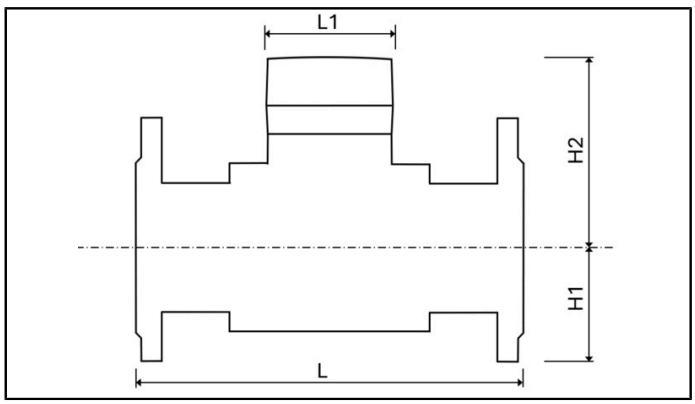


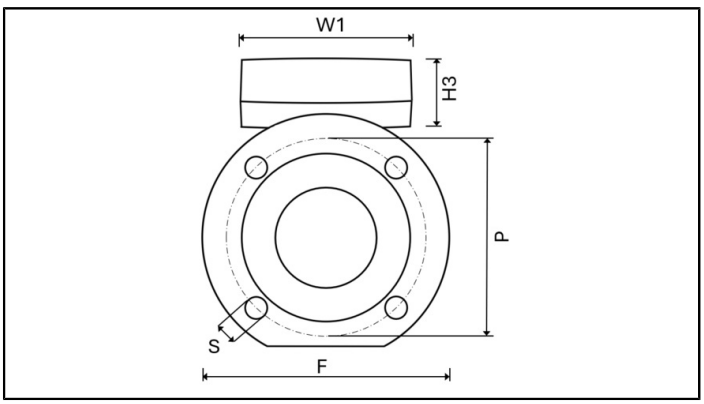
Pressure loss graph



Typical accuracy curve (3")

DIMENSIONS





Size			2"	3"	4"	6"	8"
Lay length	L	inch	10"	12"	14"	18"	20"
Height to pipe axis	H1	inch	5.6	6.5	7	7.3	8.4
Height above pipe axis	H2	inch	2.7	3.5	4.3	5.3	6.3
Register length	L1	inch	3.9	3.9	3.9	3.9	3.9
Register width	W1	inch	5.5	5.5	5.5	5.5	5.5
Register height	H3	inch	2.4	2.4	2.4	2.4	2.4
Flange diameter	F	inch	6.25 (oval)	7.5	9	11	13.5
Pitch circle diameter	P	inch	4.5	6	7.5	9.5	11.75
Number of bolt holes		pcs	2	4	8	8	8
Bolt hole diameter	D1	inch	3/4	3/4	3/4	7/8	7/8
Net weight		lbs.	22	36	46	121	132

Economic Actor Information

Applicable regulation and legal obligations for products may change.

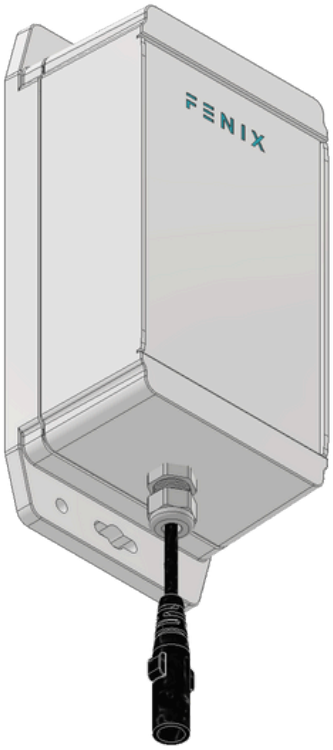
DIEHL METERING monitors applicable regulation to ensure their products comply at the date of placing on the market.

Each economic actor making products available on the market thereafter must independently keep informed about the current applicable regulation.

For questions, please contact: metering-germany-info@diehl.com

EMPOWER A
SUSTAINABLE
FUTURE

FENIX



F4 Wall Mount AMI Endpoints

Cellular Benefits

Two-way, multi-carrier LTE-M cellular connectivity negates the need for the construction and maintenance of traditional RF networks. The utilization of a secure and redundant existing cellular network infrastructure automatically becomes an extension of the utility's resources.

Advanced Software

The software architecture allows seamless integration with existing systems during a system transition so the utility can achieve a single view of data. This feature is especially helpful during a multi-year project. The software provides advanced functionality, user configurable alarms, alerts, and the ability to change settings remotely on the AMI water endpoints.

Meter Neutral Advantage

Meter Neutral endpoints offer the benefit of having multiple major meter brands (wired to any encoded output register) reporting into a single head end system. The FENIX solution fully accommodates retrofits and new installations.

Endpoint Features

- Multi-Carrier LTE-M Cellular
- Battery Power
- 120 Days Storage of Hourly Data
- Over-the-air Firmware
- Deployment Simplicity
- 3X Transmissions Per Day (with 1 Configurable)
- 100% Encoded Meter Compatibility
- Remotely Configurable
- Encrypted Data
- Non-pit set enclosure

www.FENIXusa.com

Technical Specifications

Communication Type	Two-way Multi-Carrier, Industry Standard LTE-M Cellular. 700MHz-1.9Ghz Licensed. Bluetooth 5.0 included standard on every endpoint
Power	3.6V Lithium Battery + HLC,
Environmental	-30° to 65° C / -22° to 150°F, IP67
Connection Options	Nicor, Itron, Bare Wire
Transmissions	Default 3X per Day Weekday, 1 Configurable 1X per day Weekend
Installation	Wireless BLE 2.0 from any Android Device
Leak Detection	Endpoints can detect leaks via configurable thresholds in the OMNIA software
Reverse / Zero Flow Detection	Reverse and zero flow is detected on all endpoints connected to an encoded output meter. Where register values reverse or are zero, flags are transmitted via status output from the meter
Data Logging	Endpoints store up to 120 days of hourly meter reads
Data Security	Endpoint data is encrypted during transmission using AES 256
Theft or Cut Wire Detector	If wire is cut an alarm will be sent via the software notifying operational staff
Encoded Meter Compatibility: Meter Neutral	Diehl, Sensus, Neptune, Badger, Master Meter, Kamstrup, Honeywell, Zenner, RG3, Hersey, Mueller, Siemens

All Endpoints comply with Part 15, Part 22, Part 24, and Part 27 of the FCC Rules. No license required by the utility to operate FENIX devices.

All rights reserved. FENIX reserves the right to make modifications to the products described herein at any time and without notice.

FOR MORE INFORMATION CONTACT:

FENIX *USA* | (800) 858-8593

1755 Telstar Drive, Ste. 300
Colorado Springs, CO 80920
sales@fenixusa.com | www.FENIXusa.com

FENIX



F4 AMI Endpoints

Clean Renewable Energy

Fenix's cellular endpoints harness solar power to increase system life expectancy. This increases the return on investment for the utility while lowering battery end-of-life issues and the footprint of recycling lithium batteries.

Cellular Benefits

Two-way, multi-carrier LTE-M cellular connectivity negates the need for the construction and maintenance of traditional RF networks. The utilization of a secure and redundant existing cellular network infrastructure automatically becomes an extension of the utility's resources.

Advanced Software

The software architecture allows seamless integration with existing systems during a system transition so the utility can achieve a single view of data. This feature is especially helpful during a multi-year project. The software provides advanced functionality, user configurable alarms, alerts, and the ability to change settings remotely on the AMI water endpoints.

Meter Neutral Advantage

Meter Neutral endpoints offer the benefit of having multiple major meter brands (wired to any encoded output register) reporting into a single head end system. The FENIX solution fully accommodates retrofits and new installations.

Endpoint Features

- Multi-Carrier LTE-M Cellular
- Solar and Battery Power
- 120 Days Storage of Hourly Data
- Over-the-air Firmware
- Deployment Simplicity
- 3X Transmissions Per Day (with 1 Configurable)
- 100% Encoded Meter Compatibility
- Remotely Configurable
- Encrypted Data

www.FENIXusa.com

Technical Specifications

Communication Type	Two-way Multi-Carrier, Industry Standard LTE-M Cellular. 700MHz-1.9Ghz Licensed. Bluetooth 5.0 included standard on every endpoint
Power	3.6V Lithium Battery + HLC, Solar and patented Power Management Platform
Environmental	-30° to 65° C / -22° to 150°F, IP67
Connection Options	Nicor, Itron, Bare Wire
Transmissions	Default 3X per Day Weekday, 1 Configurable 1X per day Weekend
Installation	Wireless BLE 2.0 from any Android Device
Leak Detection	Endpoints can detect leaks via configurable thresholds in the OMNIA software
Reverse / Zero Flow Detection	Reverse and zero flow is detected on all endpoints connected to an encoded output meter. Where register values reverse or are zero, flags are transmitted via status output from the meter
Data Logging	Endpoints store up to 120 days of hourly meter reads
Data Security	Endpoint data is encrypted during transmission using AES 256
Theft or Cut Wire Detector	If wire is cut an alarm will be sent via the software notifying operational staff
Encoded Meter Compatibility: Meter Neutral	Diehl, Sensus, Neptune, Badger, Master Meter, Kamstrup, Honeywell, Zenner, RG3, Hersey, Mueller, Siemens

All Endpoints comply with Part 15, Part 22, Part 24, and Part 27 of the FCC Rules. No license required by the utility to operate FENIX devices.

All rights reserved. FENIX reserves the right to make modifications to the products described herein at any time and without notice.

FOR MORE INFORMATION CONTACT:

FENIX *USA* | (800) 858-8593

1755 Telstar Drive, Ste. 300
Colorado Springs, CO 80920
sales@fenixusa.com | www.FENIXusa.com