H4000 Woltmann Helix Helical Vane Cold Water Meters

Product specification

The H4000 is a high capacity in-line Woltmann helical vane type meter with a precision injection moulded measurement mechanism eminently suitable for high and sustained flows associated with bulk metering. Low pressure loss characteristics are due to minimum restriction and no change in flow direction as water flows through the meter. For maintenance purposes the complete measuring mechanism may be quickly replaced with a pre-calibrated measuring mechanism, or alternatively a blank cover may be fitted, making a by-pass unnecessary in most cases. The Helix H4000 meter range complies with the Metrological and Technical Requirements of NMI R 49-1 (Water Meters Intended for the Metering of Cold Potable Water and Hot Water) in horizontal, vertical and inclined pipelines.

Measurement mechanism

The measurement mechanism incorporates state of the art features to give optimum long term accuracy, extended wear life and reduced maintenance. The balanced rotor has a specific gravity of 1.0 to minimise bearing loads and reduce friction. This ensures that even the slightest movement of water will be translated to the rotor, giving improved flow sensitivity at low flows. The measurement mechanism has been specially designed to give the rotor a "thrust relief" effect as water passes through the meter. This, together with the use of jeweled rotor bearings plus tungsten carbide thrust pads and stub shafts result in greater linear accuracy and longer wear life.

Register

The Helix H4000 has a hermetically sealed register with kilolitres shown in a bold straight reading drum and pointers indicating litres. An e^{sens} patented inductive resonant pulse target is also incorporated into the register optimising the overall sensing capability. The "copper can" outer barrier and mineral glass lens, together with a small drain hole in the lid preventing stagnant water pooling in the lid if left open, ensures moisture is kept out to give clear, condensation free readings over the life of the meter, even in the most severe environments. The register is protected by a robust housing and lid. The resonant target is not affected by a static magnet placed directly above the target pointer.

Reliable connectivity

The H4000 uses an e^{sens} inductive register to deliver enhanced communications performance and tamper proof security offering protection against fraud. The H4000 is compatible with the Emeris PR7 inductive pulse transmitter fully compatible with Elster's Emeris range of intelligent meter reading systems and is fully compatible with other common ancillary devices including data loggers and AMR systems. The H4000 can provide even more vital management information to assist with effective distribution management, reduce water losses from leakage and improve customer service. When combined with ancillary monitoring equipment, a range of intelligent features including leakage alarms, data logging and tariffs enables a complete metering system that addresses the efficiency objectives for water providers.

Key features

- Generous length integral flow straightening vanes to negate the effect of non-ideal upstream flow conditions.
- e^{sens} Inductive register for improved output performance and security. The register can be rotated 359°.
- Accurate in both forward and reverse flow for network management.
- Flanges drilled to Australian Standard AS 4087 Table D. (Other drill patterns available on request).
- Maximum working pressure 1600 kPa.
- Maximum limiting temperature 50°C.
- Longer wear life for optimum accuracy.

Optional features

- Emeris PR7 inductive pulse transmitters for use with data loggers, remote counters, rate of flow and process control equipment.
- Remote battery operated totalising counter with LCD display (ScanCounter).
- Inline strainer.
- Alternative flange drilling provided on request.

Materials

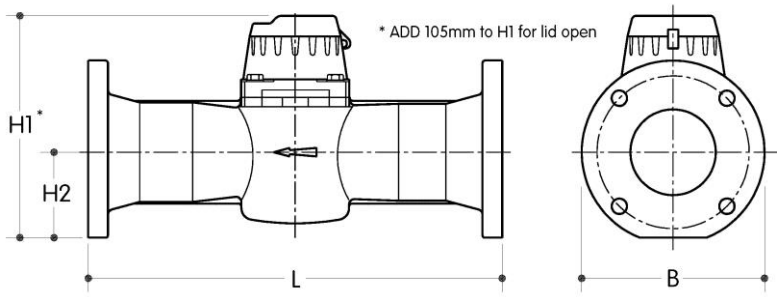
All Helix H4000 meters are manufactured from the highest quality materials, ensuring maximum resistance to wear and corrosion. The meter body is powder coated for protection in all environments.

All materials in contact with potable water comply with the Australian Standard AS 4020.

Flow performance to NMI R49-1 / Class 2

Nominal diameter (DN mm)	Units	40	50	65	80	100	150	200	250	300
Minimum flowrate - $Q_1 \pm 5\%$	kL/h	0.50	0.50	1.00	1.28	1.28	2.00	3.94	6.25	12.80
Transitional flowrate - $Q_2 \pm 2\%$	kL/h	0.81	0.81	1.60	2.05	2.05	3.20	6.30	10.0	20.48
Permanent flowrate - $Q_3 \pm 2\%$	kL/h	63.0	63.0	63.0	160	160	400	630	1000	1600
Overload flowrate - $Q_4 \pm 2\%$	kL/h	79.0	79.0	79.0	200	200	500	787.5	1250	2000
Q_3/Q_1 ratio		125	125	63	125	125	200	160	160	125
Minimum registration flowrate	kL/h	0.15	0.16	0.17	0.22	0.25	0.9	1.2	1.8	1.8
Pressure loss @ Q3	kPa	39	24	19	18	18	15	12	15	37
Maximum working pressure	kPa	1600	1600	1600	1600	1600	1600	1600	1600	1600
Maximum limiting temperature	°C	50	50	50	50	50	50	50	50	50
1st pointer registration (per revolution)	L	1	1	1	1	1	10	10	10	10
Maximum counter registration	kL	999999	999999	999999	999999	999999	9999999	9999999	9999999	9999999
PR7 Pulse Unit	L/pulse	1, 10, 100 or 1000					10, 100, 1000 or 10000			
		Please consult an Elster sales office for further details								
Dimensions										
Overall meter length (L)	mm	311	311	200	413	483	500	520	450	500
Meter height - Lid closed (H1)	mm	220	220	228	247	259	335	387	438	465
Centreline height (H2)	mm	78	78	86	94	106	135	165	198	225
Flange width (B)	mm	151	166	186	201	228	286	341	409	461
Approx. meter weight (std. packed)	kg	13	14	15.5	22	26	47	64	95	120

Meter dimensions



Register details

esens patented pulse target technology

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