HAM-LET
SMART FLOW CONTROL
IOT

Ham-Let's Internet of Things (IoT) Smart Valves present a unique breakthrough in the process valves industry. Our solution enables online monitoring, control and management of various processes that permits immediate response to safety events, machine learning and optimization, machinery & equipment protection, device tracking and additional customer-tailored features

APPLICATIONS

- Process control & monitoring
- Process management
- Machinery and equipment protection
- Predictive maintenance
- Failure prevention
- Safety alerts
- Data analytics

USES

- Real-time inlet and outlet pressure measurement
- Use differential pressure to trigger emergency shut-off
- Measure temperature to detect, prevent and suppress system over heating
- Measure vibration to indicate and avoid mechanical malfunctions
- Real-time monitoring of ambient and media parameters under intrinsic safety environment
- Integrate multiple measuring tools, reducing installation space and cost

BENEFITS

- Increased safety
- Reduced downtime costs
- Improved performance
- Lower total cost of ownership
- Optional process optimization
- Enables machine learning

IoTH-800 SERIES
INTRODUCTION

Industrial process valves are used in instrumentation and process lines in a wide range of applications. In order to measure variables such as pressure, temperature, flow, humidity and motion, one must use sensors and measuring instruments.

These external instruments are possible sources of leaks and most are not aligned with Industry 4.0 applications and benefits. Ham-Let's IoTH-800 series, with its innovative concept and advanced capabilities, is truly a blue ocean product line.

The IoTH-800 series embodies innovation. Compatible with a wide range of Industry 4.0 standards, it is inter-operable with customer's existing system.

The IoTH-800 series features constant monitoring, management and motion control, pressure, flow, humidity and temperature measurement.

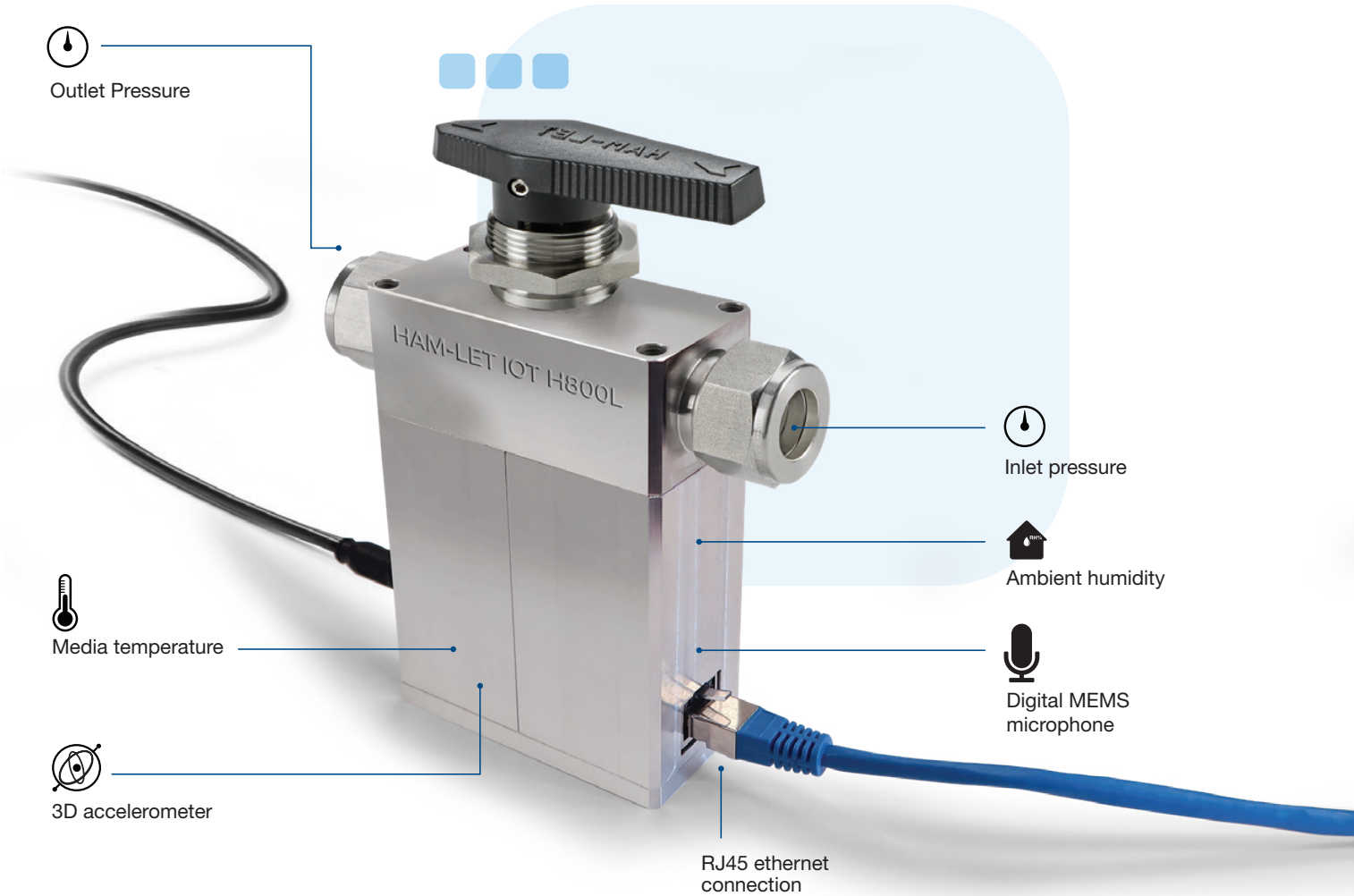
The IoTH-800 enables increased safety, reduced downtime costs and improved system performance, providing valuable data with a lower total cost of ownership.

One of the IoT-H800's unique features is its ability to alert control systems when critical parameters are triggered.

Examples of triggered events include downstream pressure drops, temperture increases, leakage and vibration. In addition, as an all-in-one product, the IoTH-800 smart valve provides the ability to predict when equipment maintenance is required.

The IoTH-800 series is offered in both wired and wireless configurations.

IoTH-800KL ETH SMART CYLINDRICAL VALVE



Features

The IoTH-800KL ETH is the large body wired configuration of the IoTH-800 Series. This smart valve is based on Ham-Let's state-of-the-art one-piece Cylindrical Valve series (H-800KL), which is suitable for low and high working pressures, wide temperature ranges and long life cycle. The one-piece body design reduces the possibility of shell leakage and offers tight shut-off, long-life service and low operating torque.

The IoTH-800KL ETH can be used for various use cases, as it features online measurement of multiple sensors, precise differential pressure measurement, motion indication and safety shut down.

- Pressure, temperature, humidity, vibration and acoustic sensing
- Precise differential pressure measurement (1% Accuracy)
- Strong communication security (TLS)
- On/off-service, one-piece cylindrical valve with two way pattern
- Encapsulated cylindrical stem design
- Allows bi-directional flow in two way straight pattern
- Virtually no dead volume

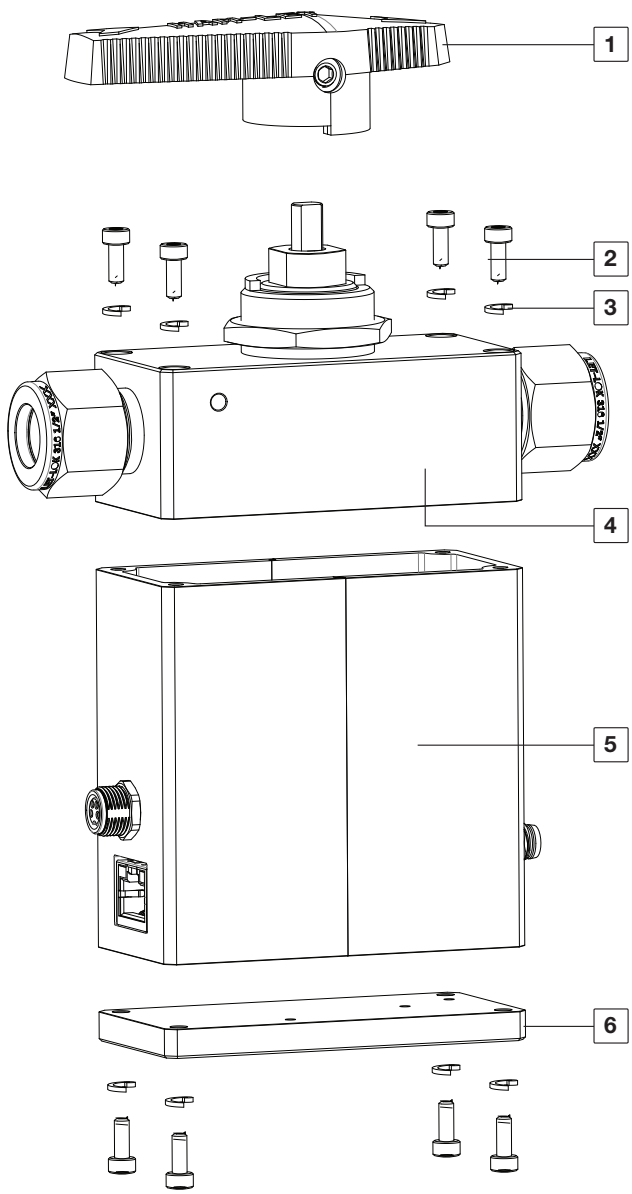
Technical Specificatons

- MAWP 2500 psi (172 bar); MAWT 185°F (85°C)
- Pressure sensor accuracy (inlet and outlet) : ±1%
- Temperature sensor accuracy: ± 3°C (Operating -20 to 85°C)
- Ambient relative humidity sensing 0% to 100%:
  - ± 3.5% rH (20%-80% rH)
  - ±5% rH (0%-100% rH)
  - High rH sensitivity: 0.004% rH/LSB
- 3D accelerometer - acceleration range of ±2/±4/±8/±16g and an angular rate range of ±125/±245/±500/±1000/±2000dps
- Communication
  - Modbus (RTU with RS485 interface)- slave mode
  - Ethernet 10/100Mbps
- SSL/TLS 1.2 2-way authentication and X.509 Certificate Management
- Stainless steel construction
- One-piece cylindrical stem ensures alignment of stem and orifice
- Panel mountable
- Variable end connection types and sizes from 1/4" to 1/2"
- Operation with colored nylon handles, metal handle, pneumatic and electrical actuator

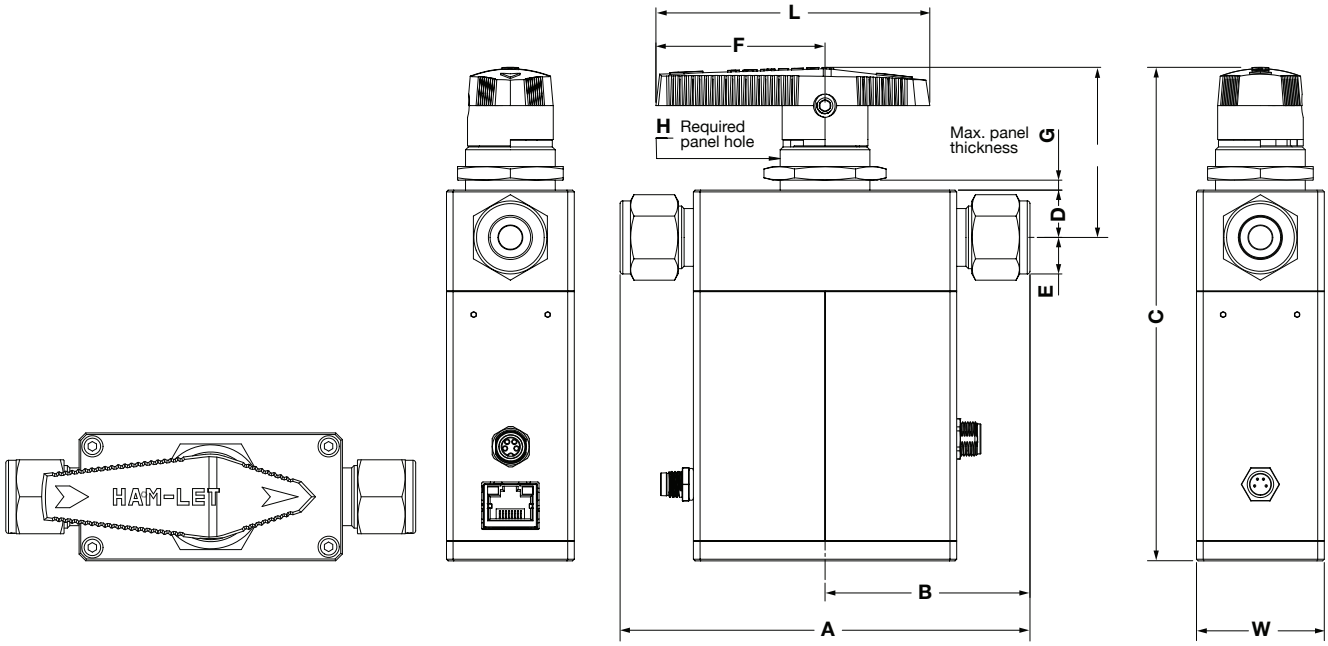
IoTH-800KL ETH SMART CYLINDRICAL VALVE

MATERIALS OF CONSTRUCTION

No.	Components	Qty	Material
1	Handle	1	Nylon + glass fiber
2	Screw M3X8 A2 DIN912	8	SST 304
3	Washer SPR.M3 DIN7980	8	SST 304
4	IoTH-800 body	1	SST 316
5	Sensors box	1	AL6061
6	Lower cover	1	AL6061



IoTH-800KL ETH SMART CYLINDRICAL VALVE
Dimensions



Connection		Body Size Designator	Orifice		CV Straight	Dimensions																					
Type	Size		mm	inch		A		B		C		D		E		F		L		G		H (diameter)		J		W	
						mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
Let-Lok© Imperial	1/4”	M	4.8	0.19	1.4	114.3	4.5	5.71	2.55	140	5.51	11.2	0.4	6.85	0.2	38.9	1.53	63	2.48	4.8	0.19	19.8	0.7	52.6	2.07	38.4	1.51
	3/8”	L	7.1	0.28	6	117.53	4.62	58.76	2.31	150.32	5.91	14.2	0.56	11.0	0.43	50.8	2	82.3	3.24	9.5	0.38	28.6	1.13	52.6	2.07	38.4	1.51
	1/2”	L	7.1	0.28	6	123.12	4.84	61.56	2.42	150.32	5.91	14.2	0.56	11.0	0.43	50.8	2	82.3	3.24	9.5	0.38	28.6	1.13	52.6	2.07	38.4	1.51
Let-Lok© Metric	6mm	M	4.8	0.19	1.4	114.42	4.50	57.2	2.25	140	5.51	11.2	0.44	6.85	0.27	38.9	1.53	63	2.48	4.8	0.19	19.8	0.78	52.6	2.07	34.8	1.51
	10mm	L	7.1	0.28	6	118	4.64	59	2.32	150.32	5.91	14.2	0.56	11.0	0.43	50.8	2	82.3	3.24	9.5	0.38	28.6	1.13	52.6	2.07	38.4	1.51
	12mm	L	7.1	0.28	6	123.12	4.84	61.56	2.42	150.32	5.91	14.2	0.56	11.0	0.43	50.8	2	82.3	3.24	9.5	0.38	28.6	1.13	52.6	2.07	38.4	1.51

IoTH-800KL WLS SMART WIRELESS CYLINDRICAL VALVE

Features

The IoTH-800KL WLS is the large body wireless configuration of the IoTH-800 Series. This smart wireless valve is based on Ham-Let's state-of-the-art, one-piece Cylindrical Valve series (H-800KL), which is suitable for low and high working pressures, a wide temperature range and long life cycle. The one-piece body design reduces the possibility of shell leakage and offers tight shut-off, long-life service and low operating torque.
The IoTH-800KL WLS can be used in critical process points at isolated locations, as it features long range wireless connectivity and long battery life to sustain continous online measurement of multiple sensors, differential pressure, motion and safety shut down.

- EX zone 0 ready. ATEX certified, indoor/outdoor
- Pressure, temperature, vibration and acoustic sensing
- Precise differential pressure measurement (0.1% Accuracy)
- On/off service, one-piece cylindrical valve with two way pattern
- Encapsulated cylindrical stem design
- Allows bi-directional flow in two way straight pattern
- Virtually no dead volume
- Actuator control (DC powered)
- Long operating battery life > five years (based on two transmissions per day)

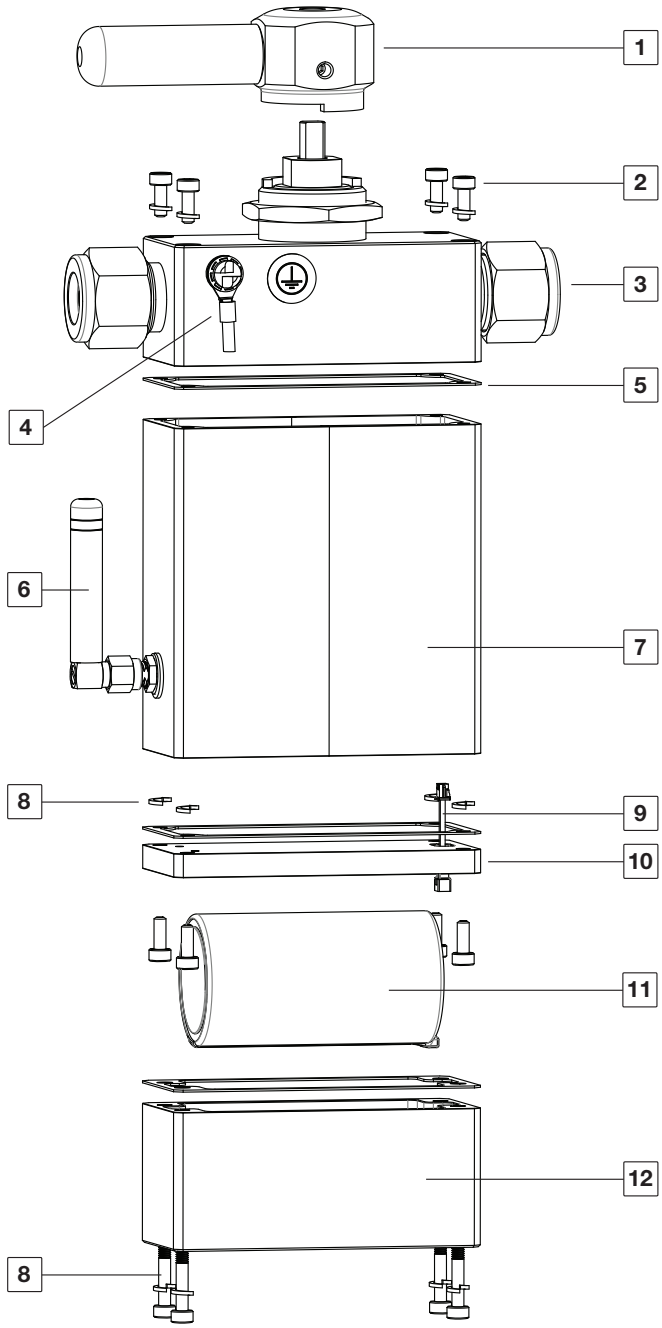
Technical Specifications

- MAWP 2500 psi (172 bar); MAWT 158°F (70°C)
- Zone 0 EX marking - "II 1G Ex ia IIC T4 Ga IP66 Ta 70°C"
- Size D safety certified battery (UL1642 or IEC 62133).
- Optional DC Powered (24V) operated version with modbus (RTU with RS485 interface)- Slave mode
- Wireless uplink connectivity - LoRa WAN 1.0
- Digital pressure sensors for inlet and outlet, ± 0.1% accuracy
- Ambient relative humidity sensing 0% to 100%:
  - ± 3.5% rH (20%-80% rH)
  - ±5% rH (0%-100% rH)
  - High rH sensitivity: 0.004% rH/LSB
- 3D accelerometer - acceleration range of ±2/±4/±8/±16g and an angular rate range of ±125/±245/±500/±1000/±2000dps
- Temperature sensor accuracy: ± 3°C
- Stainless steel construction
- One-piece cylindrical stem ensures alignment of stem and orifice
- Panel mountable
- Vent options
- Variable end connection types and sizes from 1/4" to 1/2"
- Operation with colored nylon or metal handle*
- Optional pneumatically actuated or electrically actuated (DC Powered)

*Valve with ATEX certification will feature a metal handle

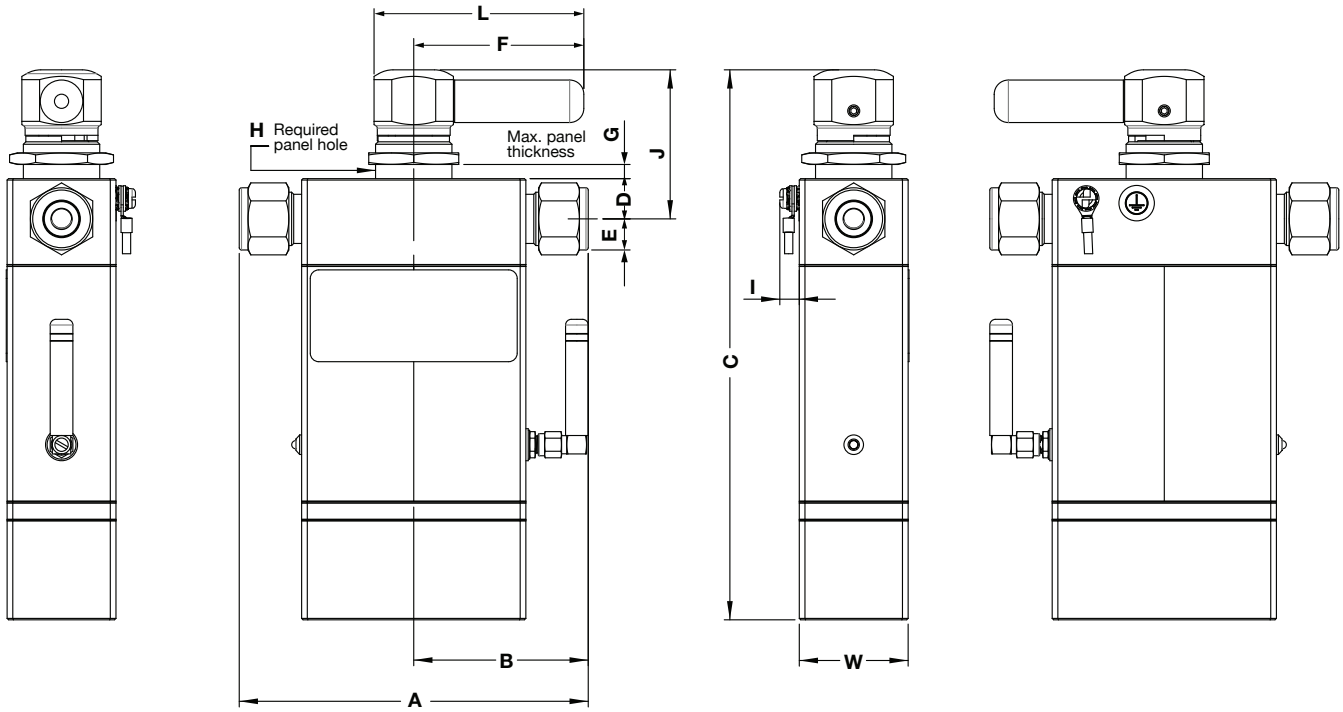
Materials of Construction

No.	Components	Qty	Material
1	Handle	1	SST 316
2	Screw M3X8 A2 DIN912	8	SST 304
3	IoTH-800 body	1	SST 316
4	Grounding cable	1	-
5	Gasket	3	Silicon
6	Antena	1	-
7	Sensor box	1	SST 303
8	Washer SPR.M3 DIN7980	12	SS T304
9	Power cable	1	-
10	Lower cover	1	SST 303
11	Battery	1	-
12	Battery cover	1	SST 303



IoTH-800KL WLS SMART WIRELESS CYLINDRICAL VALVE

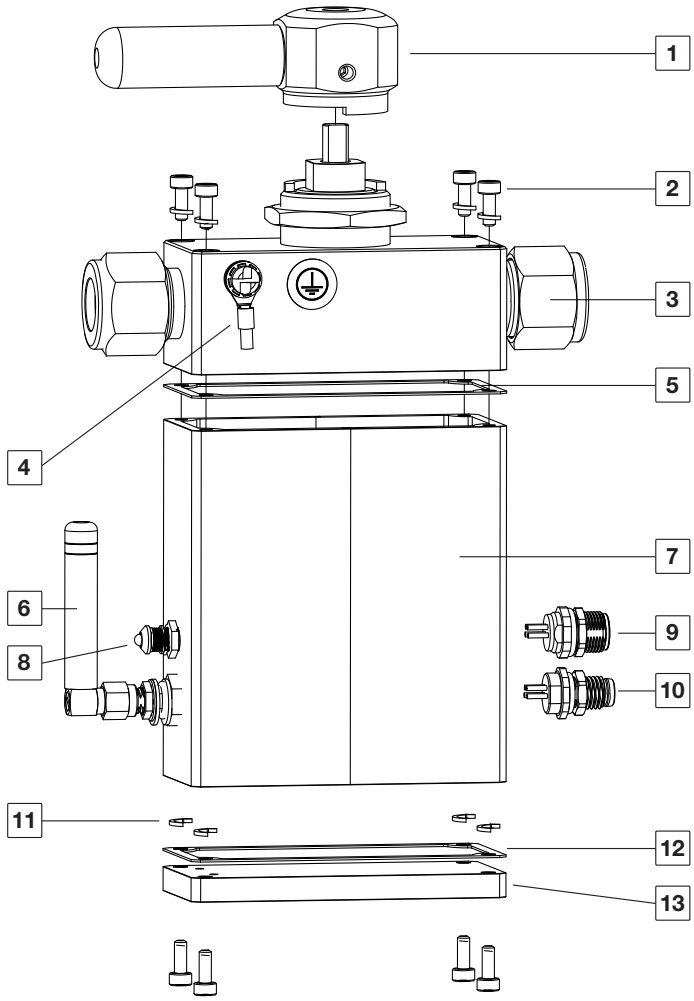
Dimensions



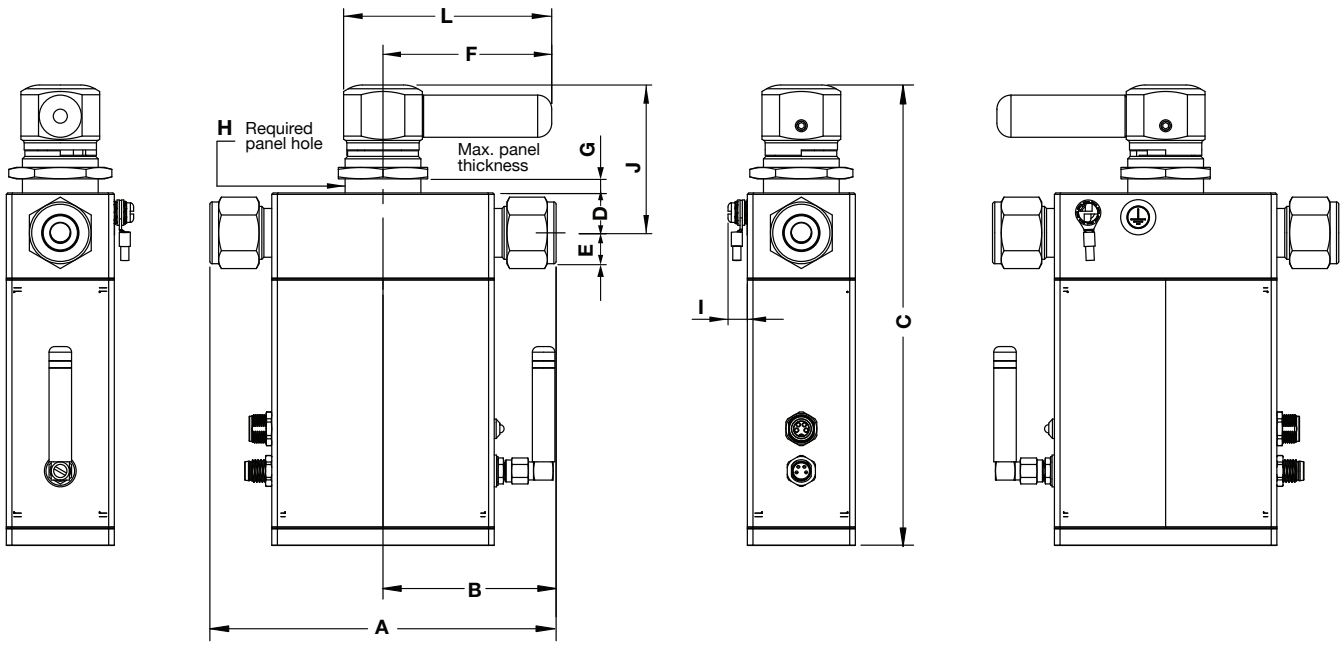
Connection		Body Size Designator	Orifice		CV Straight	Dimensions																							
Type	Size		mm	in		A		B		C		D		E		F		L		G		H (diameter)		J		W		I	
						mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
Let-Lok© Imperial	1/4”	M	4.8	0.19	1.4	114.35	4.50	57.1	2.25	178	7.01	11.2	0.44	6.85	0.27	38.9	1.53	63	2.48	4.8	0.19	19.8	0.78	36.63	1.44	38.4	1.51	6.9	0.27
	3/8”	L	7.1	0.28	6	117.53	4.62	58.76	2.31	194	7.63	14.2	0.56	11.0	0.43	60	2.36	74	2.91	9.5	0.38	28.6	1.13	52.6	2.07	38.4	1.51	6.9	0.27
	1/2”	L	7.1	0.28	6	123.12	4.84	61.56	2.42	194	7.63	14.2	0.56	11.0	0.43	60	2.36	74	2.91	9.5	0.38	28.6	1.13	52.6	2.07	38.4	1.51	6.9	0.27
Let-Lok© Metric	6mm	M	4.8	0.19	1.4	114.42	4.50	57.21	2.25	178	7.01	11.2	0.44	6.85	0.27	38.9	1.53	63	2.48	4.8	0.19	19.8	0.78	36.63	1.44	38.4	1.51	6.9	0.27
	10mm	L	7.1	0.28	6	118	4.64	59	2.32	194	7.63	14.2	0.56	11.0	0.43	60	2.36	74	2.91	9.5	0.38	28.6	1.13	52.6	2.07	38.4	1.51	6.9	0.27
	12mm	L	7.1	0.28	6	123.12	4.84	61.56	2.42	194	7.63	14.2	0.56	11.0	0.43	60	2.36	74	2.91	9.5	0.38	28.6	1.13	52.6	2.07	38.4	1.51	6.9	0.27

Materials Of Construction

No.	Components	Qty	Material
1	Handle	1	SST316
2	Screw M3X8 A2 DIN912	8	SST304
3	IoTH-800 body	1	SST316
4	Grounding cable	1	-
5	Gasket	3	Silicon
6	Antena	1	-
7	Sensor box	1	SST303
8	LED	1	-
9	4P Cable	1	-
10	Power	1	-
11	Washer SPR.M3 DIN7980	8	SST304
12	Power cable	1	-
13	Lower cover	1	SST303



IoTH-800KL WLS DC SMART WIRELESS CYLINDRICAL VALVE
Dimensions



Connection		Body Size Designator	Orifice		CV Straight	Dimensions																							
Type	Size		mm	in		A		B		C		D		E		F		L		G		H (diameter)		J		W		I	
						mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
Let-Lok© Imperial	1/4”	M	4.8	0.19	1.4	114.35	4.50	57.1	2.25	147.7	5.81	11.2	0.44	6.85	0.27	38.9	1.53	63	2.48	4.8	0.19	19.8	0.78	36.63	1.44	38.4	1.51	6.9	0.27
	3/8”	L	7.1	0.28	6	117.53	4.62	58.76	2.31	163.7	6.44	14.2	0.56	11.0	0.43	60	2.36	74	2.91	9.5	0.38	28.6	1.13	52.6	2.07	38.4	1.51	6.9	0.27
	1/2”	L	7.1	0.28	6	123.12	4.84	61.56	2.42	163.7	6.44	14.2	0.56	11.0	0.43	60	2.36	74	2.91	9.5	0.38	28.6	1.13	52.6	2.07	38.4	1.51	6.9	0.27
Let-Lok© Metric	6mm	M	4.8	0.19	1.4	114.42	4.50	57.21	2.25	147.7	5.81	11.2	0.44	6.85	0.27	38.9	1.53	63	2.48	4.8	0.19	19.8	0.78	36.63	1.44	38.4	1.51	6.9	0.27
	10mm	L	7.1	0.28	6	118	4.64	59	2.32	163.7	6.44	14.2	0.56	11.0	0.43	60	2.36	74	2.91	9.5	0.38	28.6	1.13	52.6	2.07	38.4	1.51	6.9	0.27
	12mm	L	7.1	0.28	6	123.12	4.84	61.56	2.42	163.7	6.44	14.2	0.56	11.0	0.43	60	2.36	74	2.91	9.5	0.38	28.6	1.13	52.6	2.07	38.4	1.51	6.9	0.27

IoT GATEWAY

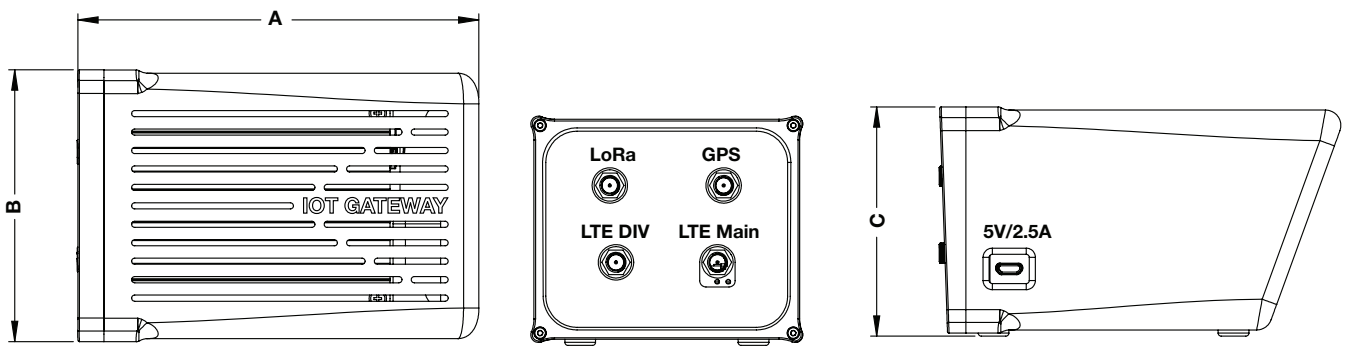
Features & Technical Specifications

Ham-Let's IoT Gateway enables secure wired and wireless connection to local control systems or to cloud computing services, such as IoT-LET (Ham-Let's smart valve management platform).

The IoT Gateway is onboarded to IoT-LET via secured communication using an unique ID. It also features encrypted data storage and internal communication with with our IoT Smart valves as well as our IoT-LET portal.

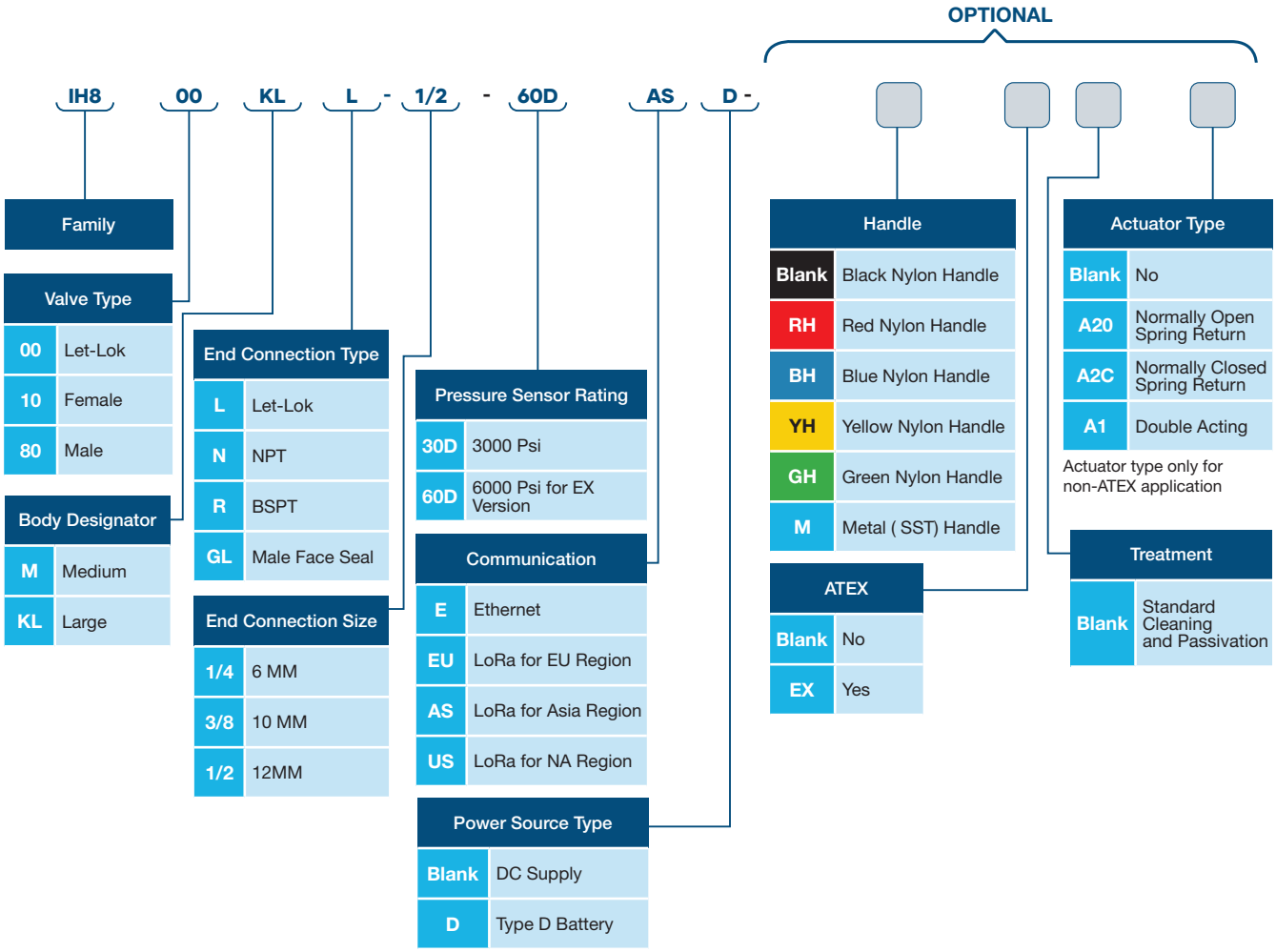
- Closed ports for incoming traffic
- Access to gateway configuration requires special user authentications
- Communication
  - LoRa WAN 1.0 network server
  - Ethernet 10/100/1000Mbps
  - WiFi
  - Support optional Cellular LTE module (EU, US, Asia)
- Built-in heat sink for thermal heat dissipation management
- Supports 5V/2.5A power supply
- LoRA frequency supports global license-free frequency band (EU868, US915, AS923)
- Operating temperature: -20 °C ~ 65°C
- FCC & CE compliance
- Interface: 1x LAN, USB Power, LoRA Antenna, 2x LTE Antenna and GPS Antenna
- SSL/TLS 1.2 2-way authentication and X.509 Certificate Management
- HSM based secure storage
- Secure remote firmware update
- Local web UI with Rest API support
- Network statistics support
- Edge analytics support

IoT GATEWAY Dimensions

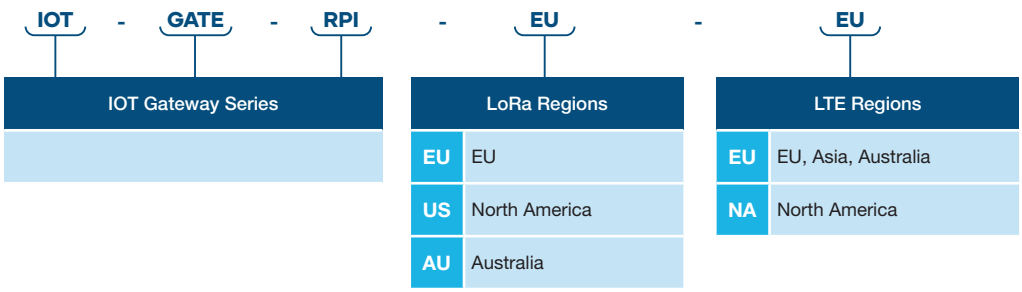


A		B		C	
mm	in	mm	in	mm	in
130	5.12	88	3.46	74.5	2.93

IoTH-800 SERIES HOW TO ORDER



IoT GATEWAY HOW TO ORDER



For Actuated Valves

- For information about ordering actuators for high temperatures, or actuator accessories (limit switch, solenoid valve) please refer to UCT's Pneumatic Actuator Catalog
- For double mounting actuators, please contact your local representative

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