LeakLess Solenoid Controller

Technical Data Sheet

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LeakLess Solenoid Controller – device for remote control of pressure valves

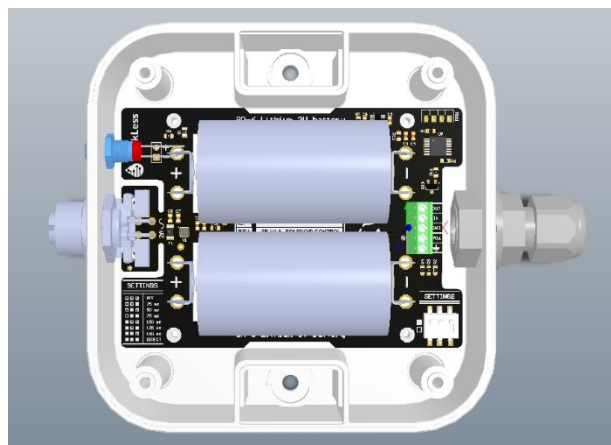## 1.　　Design and components

The main components of the device are:

- ASA plastic enclosure
- Connector to solenoid element – M12 female; 3 pins; right angle; front panel mount; connector cap with chain
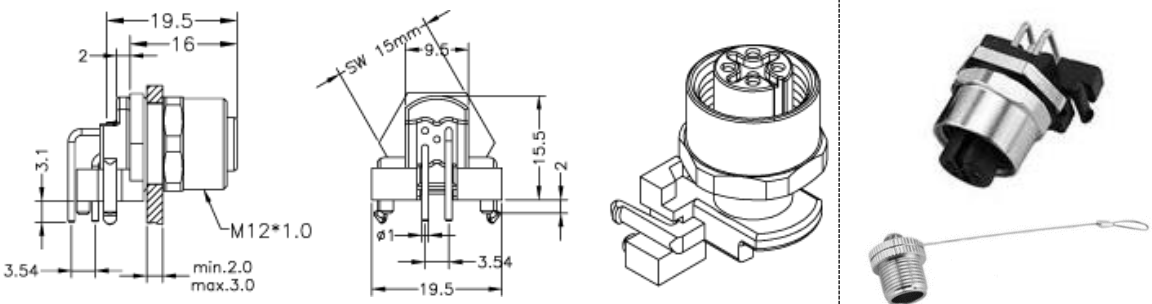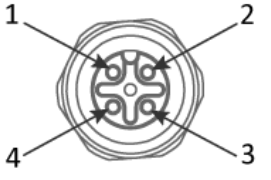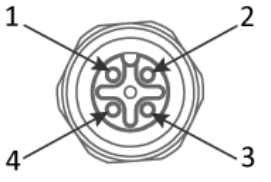- Connector towards LeakLess PDL-AG device

Weight:

- ≈200 g

Ingress protection:

- Enclosure: IP67/IP68; Connectors: IP68

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2.   Connectors

Analog and digital inputs

Electrical Characteristics	Rating voltage	250 V AC/DC	Connector size	M12
	Insulation resistance	>100 MΩ	Locking system	Screw locking
	Rating current	4 A	Ambient temperature	-25 °C … 85 °C
	Contact resistance	≤5 mΩ	Ingress protection	IP67/IP68
	Contacts material: Phosphorus copper with gold plated			

Connection to solenoid valve (M12 female; 4 pins)

Pinout schematic

Device connector	Accompanied cable connector

Electrical wiring

	Connector	Cable
GND	PIN 1	Brown (do not connect!)
M−	PIN 2	White
M+	PIN 3	Blue
–	PIN 4	–

Input connection from LeakLess PDL-AG (M12 female; 4 pins)

Pinout schematic

Device connector	Accompanied cable connector

Electrical wiring

	Connector	Cable
GND	PIN 1	Brown
–	PIN 2	–
Input	PIN 3	Blue
Output	PIN 4	Black

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3. Solenoid control logic

Connection to solenoid valve

- Supported solenoid of impulse types

Solenoid terminals	M+		M-
Output type	Three state determined by relative voltage between M+ and M-		
	Negative voltage	Positive voltage	Neutral
	-7V	+7V	0V

Example of solenoid logic:

1. LeakLess PDL-AG generates request by changing state of its digital output
2. LeakLess solenoid controller generates impulse depending on rising/falling edge state of input signal provided by LeakLess PDL-AG
3. Impulse solenoid valve redirects the flow propagation accordingly

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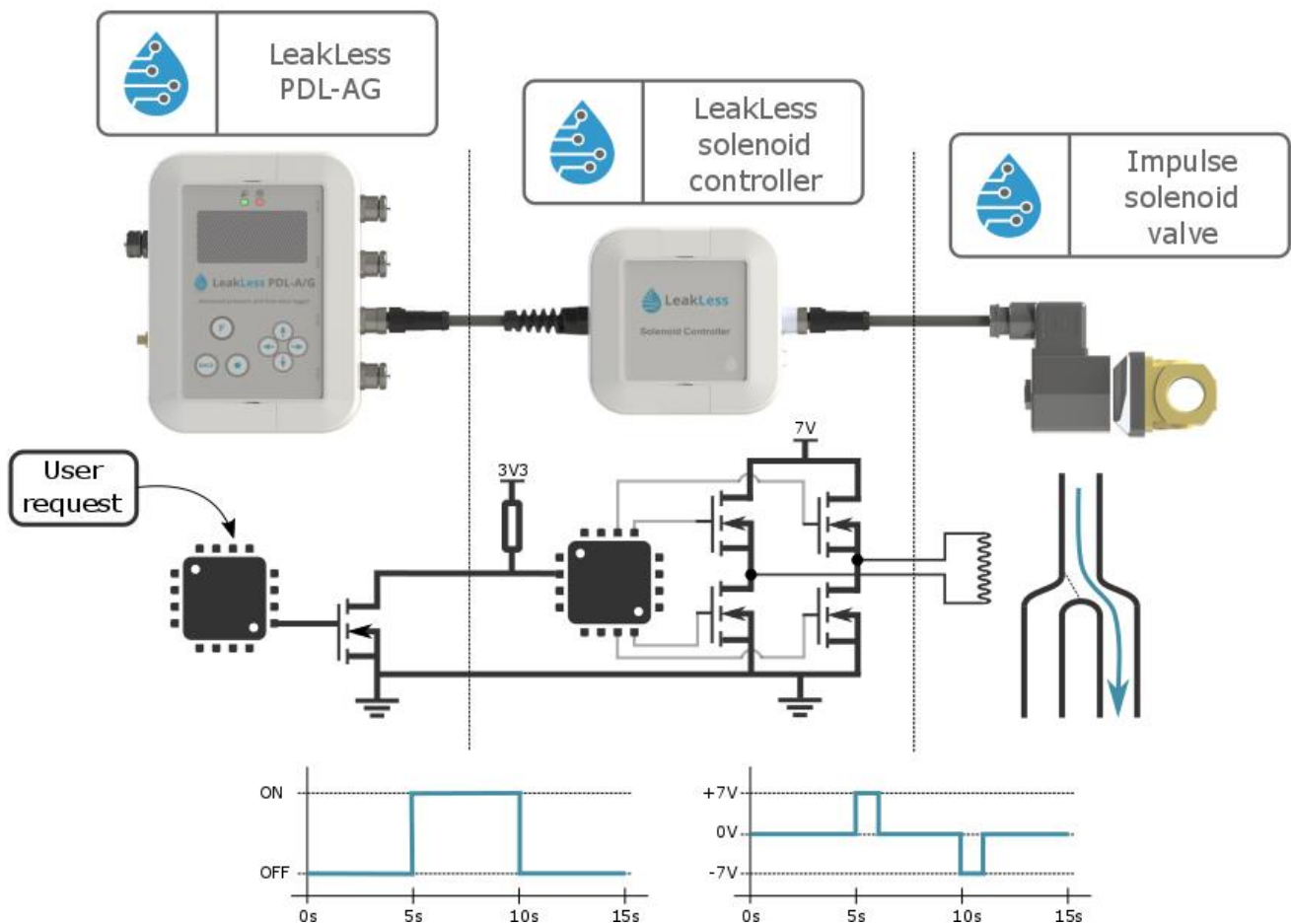
4. Switch configuration

Switch impulse interval is configured combining three DIP switch elements. The combination indicates the interval as is given in the table below.

Illustration	Setting choice	Setting type	LED indicator
	☐☐☐	OFF	OFF
	☐☐■	Available on sticker in housing	While pulse active
	☐■☐	Available on sticker in housing	While pulse active
	☐■■	Available on sticker in housing	While pulse active
	■☐☐	Available on sticker in housing	While pulse active
	■☐■	Available on sticker in housing	While pulse active
	■■☐	Available on sticker in housing	While pulse active
	■■■	Direct (no pulse)	ON

5. Switch testing via LeakLess PDL-AG

The integration of LeakLess solenoid controller and LeakLess PDL-AG can be tested by following the given steps:

1. Check wiring between LeakLess PDL-AG, LeakLess solenoid controller and Solenoid valve
2. Use LeakLess PDL-AG
   a. Start LeakLess PDL-AG
   b. Go to *CH Config* → *Dig. Outputs* → *Dig. Output X* → • *(push button)*

6. Power consumption | Batteries

Internally powered by Lithium batteries (C-size)

- Voltage level: 2 x 3,6V = 7,2V
- Capacity: 2 x 9000 mAh = 18000 mAh

Activity	Current consumption (typical)	Activity length (typical)	Expected battery autonomy (# of switches)
Switching action	700 mA (typical with 5W solenoid)	500 ms	186624
		1000 ms	93312
		2000 ms	46656

7. Permitted ambient conditions

Enclosure material and rating: ASA plastic; ingress protection IP67 (1 m w.g. for 30 minutes)

- Operating temperature: -20 °C ... +80 °C
- Storage temperature: -40 °C ... +85 °C

Mechanical load: Version: 1 G, 1-800 Hz sinusoidal in all directions.

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8.   Mounting

The enclosure design enables device mounting with ease, relying on two types of adapters:

- Pole mount bracket – used for direct on-pipe fixing
- Suspension bracket – used for on-wall fixing

Mounting accessories		
Pole mount bracket	Schematic	
Suspension bracket	Schematic	

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9.   Additional information

For more details, please confer the ***LeakLess PDL-AG Operation manual***.

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