

Application

The IQAN-LSL is a new lever in the IQAN product group. This lever focuses on compact design, weather resistance and safety.

The LSL is a single-axis joystick, 0.5 - 4.5 Vdc, intended for the proportional control of one double-acting hydraulic function. The lever has several options including a manual neutral detent, a switch in the top of the handle and solenoid detents at full stroke in either the B (minus) direction or both A (plus) and B (minus) directions. A solenoid detent at 75% in the B (minus) direction is also available. The LSL can be mounted in the armrest or on the dashboard in mobile vehicles. It has a comfortable grip and is easily actuated for good ergonomics.

Design and function

The IQAN-LSL is lightweight with small installation dimensions. The ergonomic design gives a good support to the arms and wrists and assures a comfortable grip from several angles. Mounting screws are installed from underneath for a clean appearance of dashboard, panel or armrest.

The IQAN-LSL has an IP65 rating above the flange and the cable has a sealed AMP junior-power timer connector. This unit is designed for the outdoor environment.

The IQAN-LSL is a spring centered, dual sensor device. The optional switch in the top of the handle can be used to detect operator presence. The dual sensors provide 0.5 - 4.5 Vdc and 4.5 - 0.5 Vdc outputs which allows error checking to meet high safety requirements. All inputs and outputs are protected against short circuit to ground. The LSL is well suited as a control unit for a variety of valve drivers. The LSL fits to the IQAN platform and is designed to meet typical environmental stresses in mobile hydraulic applications.

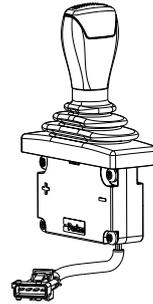


Order code	
Example	IQAN-LSL
Unit type code	_____
Unit type code:	product description LSL - lever, single, large

Descriptions

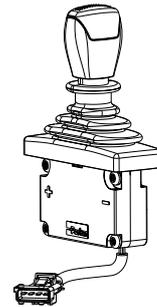
IQAN - LSL - E0 - // - //

The basic version of the LSL has a single cable with a sealed 4 pos AMP junior-power timer connector. The range for Output A is 0.5 to 4.5Vdc and the range for Output B is 4.5 to 0.5Vdc.



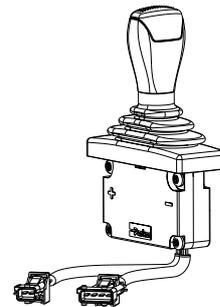
IQAN - LSL - E0 - DN - //

This version of the LSL has a single cable with a sealed 4 pos. AMP junior-power timer connector. The range for Output A is 0.5 to 4.5Vdc and the range for Output B is 4.5 to 0.5Vdc. There is a spring loaded manual detent that must be disengaged to move the handle away from the center (neutral) position.



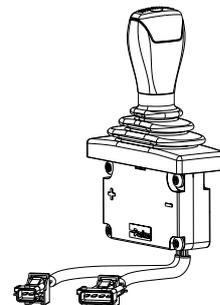
IQAN - LSL - E0 - // - Lx

This version of the LSL has two cables. The main cable has a sealed 4 pos. AMP junior-power timer connector. The second cable is for the solenoid detent option and has a 2 pos. AMP junior-power timer connector. The range for Output A is 0.5 to 4.5Vdc and the range for Output B is 4.5 to 0.5Vdc. The solenoid supply is from V_{BAT} .



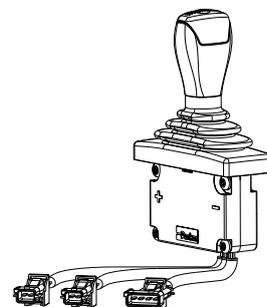
IQAN - LSL - E1 - // - //

This version of the LSL has two cables. The main cable has a sealed 4 pos. AMP junior-power timer connector. The second cable is for the switch and has a 2 pos. AMP junior-power timer connector. The range for Output A is 0.5 to 4.5Vdc and the range for Output B is 4.5 to 0.5Vdc. The switch supply is from V_{BAT} .



IQAN - LSL - E1 - // - Lx

This version of the LSL has three cables. The main cable has a sealed 4 pos. AMP junior-power timer connector. The other two cables are for the switch and solenoid detent options. The range for Output A is 0.5 to 4.5Vdc and the range for Output B is 4.5 to 0.5Vdc. The switch supply is from V_{BAT} and the solenoid supply is from V_{BAT} .



Model code

(Example) **IQAN - LSL - E0 - // - L1**

Code	Description
E0	standard handle
E1	handle w/ button

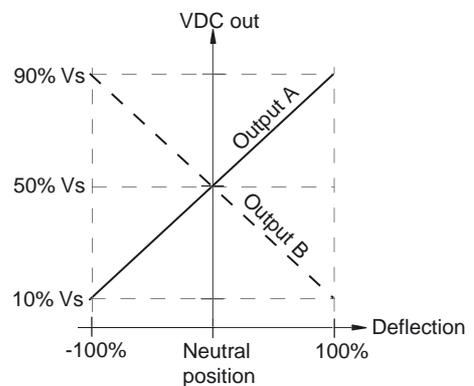
Code	Description
L1	1 solenoid detent, (-) direction
L2	2 solenoid detents, (+) and (-) directions
L3	1 solenoid detent, (-) direction, 75%
//	no option

Code	Description
DN	manual detent
//	no option

Outputs

The graph to the right demonstrates the mirrored voltage outputs. Output A is 10% - 90% V_s and Output B is 90% - 10% V_s .

With a nominal 5Vdc supply, the range for Output A is 0.5 to 4.5Vdc and the range for Output B is 4.5 to 0.5Vdc.



Electronic Remote Controls IQAN-LSL

Technical Data

General

Weight	0.22 Kg
Rated power supply (V_s)	5 Vdc
Load resistive (min.)	1K Ω
Load capacitive (max.)	1 μ F
Current consumption	16 mA

Mechanical

Angle of movement	$\pm 20^\circ$
Expected life (operations)	5 million

Environment

Operating temperature	-40° to 70 °C
Sealing above the flange	IP65
Sealing with DN option	IP44

Analog outputs

Active range (VDC out)	10%-90% V_s
Resolution	<2mV

Options

Handle switch, top	V_{BAT} (+12V, +24V)
Mechanical detent	Neutral only
Solenoid detents	V_{BAT} (+24V) B(-), A(+) and B(-) or 75% B(-)

Environmental Protection

EMI

ISO 11452-2 (immunity vs EM field)
ISO 14982 (radiated emission)
ISO 11452-4 (immunity vs injected RF)
ISO 7637-2 (immunity vs supply transients)

ESD

EN 61000-4-2 (external)

Mechanical environment

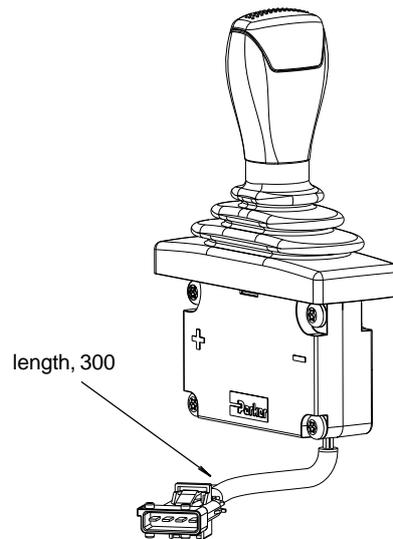
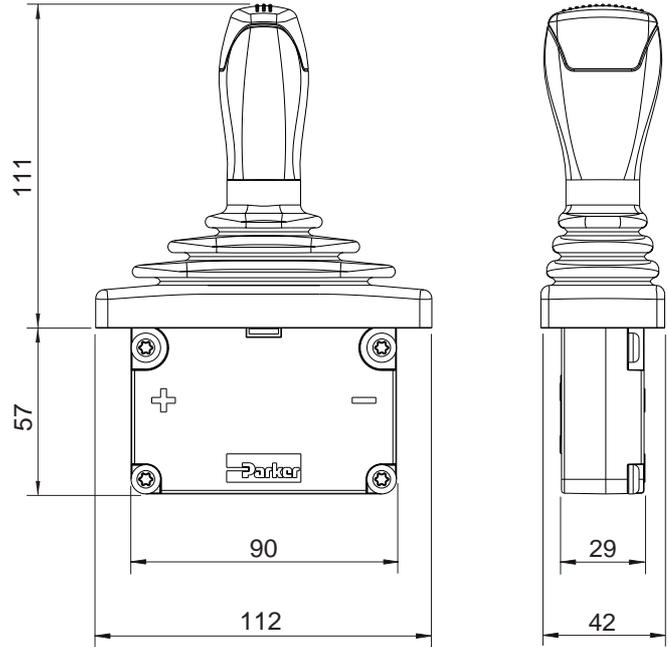
IEC 68-2-64 Fh (random)
IEC 68-2-27 Es (shock)
IEC 68-2-29 Eb (bump)

Climate environment

IEC 68-2-18 Rb3 (water)
IEC 68-2-30 Db (var1, damp, cyclic)
IEC 68-2-3 Ca (damp, heat steady state)
IEC 68-2-2 Bb (heat)
IEC 68-2-1 Ab (cold)
IEC 68-2-14 Nb (change of temperature)

Chemical environment

IEC 68-2-52 Kb (salt mist, cyclic)



unit = mm

For latest information visit our website www.iqan.com

Information in this data sheet is subject to change without notice.



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