

# LSLR Ultra-Low Range Accelerometer +/-5V, 0-5V or 4-20mA Output

The LSLR is a very rugged, ultra-low, single-axis accelerometer designed for peak performance in extreme conditions. The fluid damped mechanism delivers superior noise rejection in high shock and vibration environments as well as excellent output stability. Units are available with a 6-pin connector, pin-terminals or flying leads. Available outputs include +/-5V, 0-5V and 4-20mA. Custom input ranges, filters and temperature sensor are also available on request.



## Features

- **Extremely Rugged**
- **$\pm 0.1g$ ,  $\pm 0.25g$ ,  $\pm 0.5g$ ,  $\pm 1g$  &  $\pm 2g$  Ranges**
- **High Performance**
- **Temperature Sensor Available**
- **+/-5V, 0-5V or 4-20mA Output**
- **RoHS Compliant**

## Applications

- **Seismic Monitoring**
- **Geophysical Measurements**
- **Ultra-Low Acceleration Analysis**
- **Civil Engineering**
- **Flight Testing**
- **Robotics**



### Connector Version

PIN	FUNCTION	
	SINGLE OR 4-20mA OUTPUT	DUAL SUPPLY
A	+VDC	+VDC
B	PWR & SIG COM	PWR & SIG COM
C	N/C	-VDC
D	SIG OUT	SIG OUT
E	N/C	N/C
F	N/C	N/C

### Pin Terminal Version

PIN	FUNCTION	
	SINGLE SUPPLY OR 4-20mA OUTPUT	DUAL SUPPLY
A	+VDC	+VDC
B	PWR & SIG COM	PWR & SIG COM
C	N/C	-VDC
D	SIG OUT	SIG OUT
E	N/C	N/C
F	N/C	N/C

### Wired Version

WIRE COLOR	FUNCTION	
	SINGLE SUPPLY OR 4-20mA OUTPUT	DUAL SUPPLY
RED	+VDC	+VDC
WHITE	PWR & SIG COM	PWR & SIG COM
BLACK	N/C	N/C
GREEN	SIG OUT	SIG OUT

# LSLR Ultra-Low Range Accelerometer +/-5V, 0-5V or 4-20mA Output

## 0-5V Output Version:

### PERFORMANCE

Input Range (g)	±0.1	±0.25	±0.5	±1	±2
Full Range Output (FRO <sup>1</sup> ) VDC 0.5%	0-5				
Non-linearity (% FRO <sup>2</sup> ) maximum	0.02	0.02	0.02	0.02	0.05
Scale Factor (V/g) nominal	25.0	10.0	5.0	2.5	1.25
SF Temp Sensitivity (PPM/°C) max	300	100	60	60	60
Bandwidth (-3 dB), Hz nominal	2	15	20	30	30
Transverse Axis Misalign. (°max)	±0.25	±0.50	±0.5	±0.5	±0.5
Bias (g) range	±0.04	±0.01	±0.02	±0.02	±0.02
Bias Temp Sensitivity (µg/°C) max	50	50	50	50	50

### Resolution & Threshold (µg)<sup>3</sup>

1

<sup>1</sup>Full Range is defined "from negative full input to positive full input g." <sup>2</sup>Nonlinearity is specified as deviation of output referenced to theoretical sine function value, independent of misalignment. <sup>3</sup>Full Resolution is achieved with noise reduction techniques.

### ELECTRICAL

Input Voltage Range, (VDC)	9 to 18
Input Current, mA, max	40
Output Impedance (Ohms) nominal	1
Noise (Vrms) max (3 Hz to 300 kHz)	0.002

### ENVIRONMENTAL

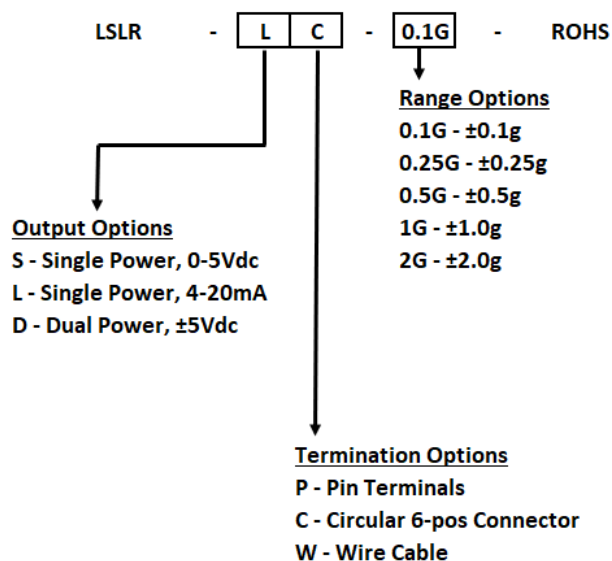
Operating Temp Range	-40°C to +80°C
Storage Temp Range	-60°C to +90°C
Shock	1500g, 0.5 msec, ½ sine
Seal	IP66

\*Specifications subject to change without notice on account of continued product development.

### PHYSICAL

Weight (grams) max	250
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## How to Order:



# LSLR Ultra-Low Range Accelerometer +/-5V, 0-5V or 4-20mA Output

## ±5V Output Version:

### PERFORMANCE

Input Range (g)	±0.1	±0.25	±0.5	±1	±2
Full Range Output (FRO <sup>1</sup> ) VDC 0.5%	±5				
Non-linearity (% FRO <sup>2</sup> ) maximum	0.02	0.02	0.02	0.02	0.05
Scale Factor (V/g) nominal	50.0	20.0	10.0	5.0	2.5
SF Temp Sensitivity (PPM/°C) max	300	100	60	60	60
Bandwidth (-3 dB), Hz nominal	2	15	20	30	30
Transverse Axis Misalign. (°max)	±0.25	±0.5	±0.5	±0.5	±0.5
Bias (g) range	±0.04	±0.01	±0.02	±0.02	±0.02
Bias Temp Sensitivity (µg/°C) max	50	50	50	50	50

### Resolution & Threshold (µg)<sup>3</sup>

1

<sup>1</sup>Full Range is defined "from negative full input to positive full input g." <sup>2</sup>Nonlinearity is specified as deviation of output referenced to theoretical sine function value, independent of misalignment. <sup>3</sup>Full Resolution is achieved with noise reduction techniques.

### ELECTRICAL

Input Voltage Range, (VDC)	±12 to ±18
Input Current, mA, max	30
Output Impedance (Ohms) nominal	1
Noise (Vrms) max (3 Hz to 300 kHz)	0.002

### ENVIRONMENTAL

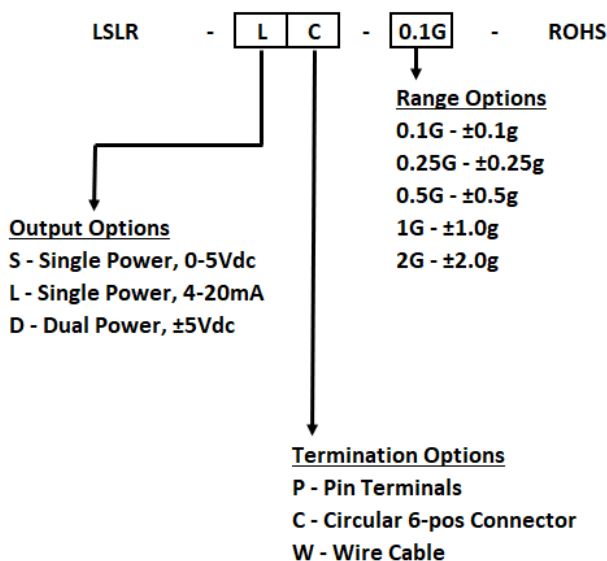
Operating Temp Range	-40°C to +80°C
Storage Temp Range	-60°C to +90°C
Shock	1500g, 0.5 msec, ½ sine
Seal	IP66

\*Specifications subject to change without notice on account of continued product development.

### PHYSICAL

Weight (grams) max	250
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## How to Order:



# LSLR Ultra-Low Range Accelerometer +/-5V, 0-5V or 4-20mA Output

## 4-20mA Output Version:

### PERFORMANCE

Input Range (g)	±0.1	±0.25	±0.5	±1	±2
Full Range Output (FRO <sup>1</sup> ) mA 0.5%	4-20				
Non-linearity (% FRO <sup>2</sup> ) maximum	0.03	0.03	0.03	0.03	0.05
Scale Factor (mA/g) nominal	80.0	32.0	16.6	8.0	4.0
SF Temp Sensitivity (PPM/°C) max	300	100	60	60	60
Bandwidth (-3 dB), Hz nominal	2	15	20	30	30
Transverse Axis Misalign. (°max)	±0.25	±0.5	±0.5	±0.5	±0.5
Bias (g) range	±0.04	±0.01	±0.02	±0.02	±0.02
Bias Temp Sensitivity (µg/°C) max	50	50	50	50	50

### Resolution & Threshold (µg)<sup>3</sup>

1

<sup>1</sup>Full Range is defined "from negative full input to positive full input g." <sup>2</sup>Nonlinearity is specified as deviation of output referenced to theoretical sine function value, independent of misalignment. <sup>3</sup>Full Resolution is achieved with noise reduction techniques.

### ELECTRICAL

Input Voltage Range, (VDC)	+20 to +30
Input Current, mA, max	75
Noise (mA rms) max (3 Hz to 300 kHz)	0.01

### ENVIRONMENTAL

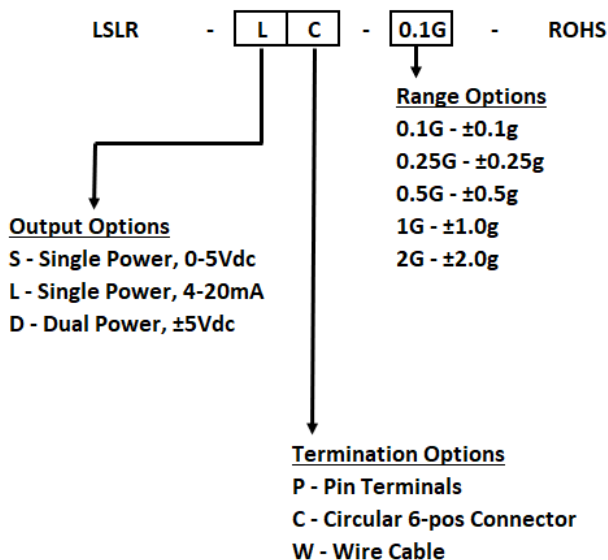
Operating Temp Range	-40°C to +80°C
Storage Temp Range	-60°C to +90°C
Shock	1500g, 0.5 msec, ½ sine
Seal	IP66

\*Specifications subject to change without notice on account of continued product development.

### PHYSICAL

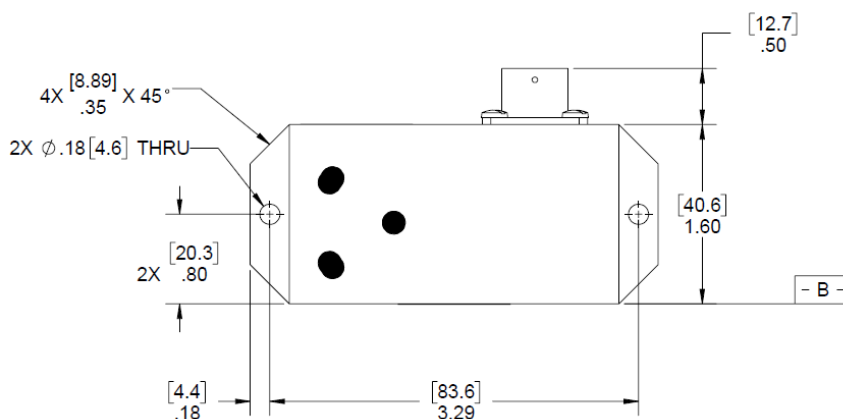
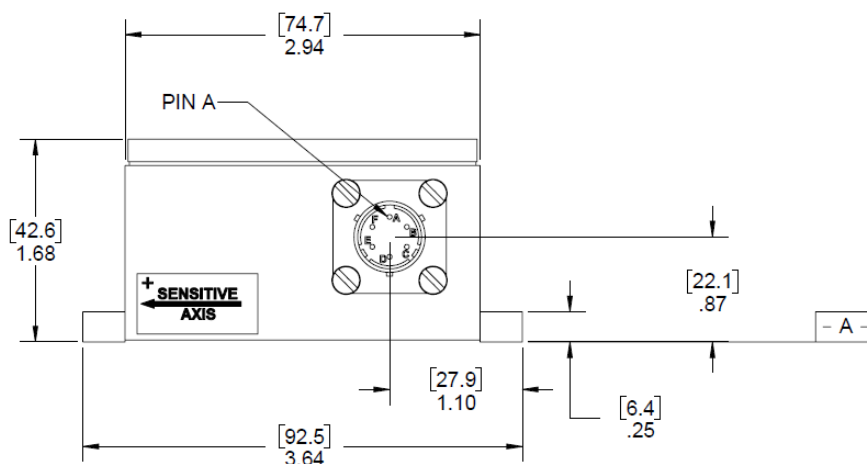
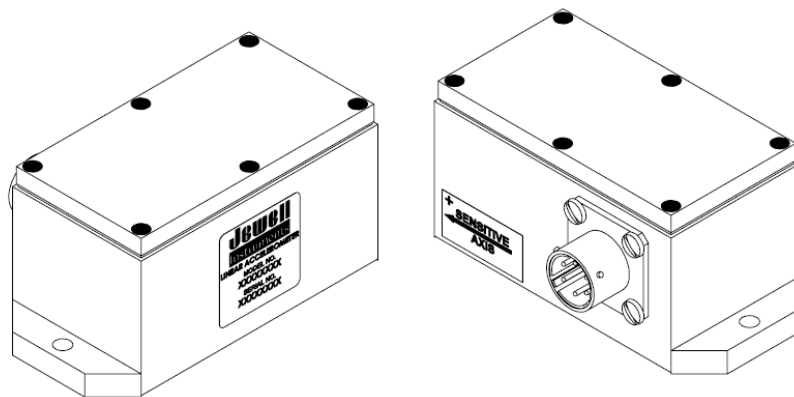
Weight (grams) max	250
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## How to Order:



# LSLR Ultra-Low Range Accelerometer +/-5V, 0-5V or 4-20mA Output

## Outline Drawing: Connector Version

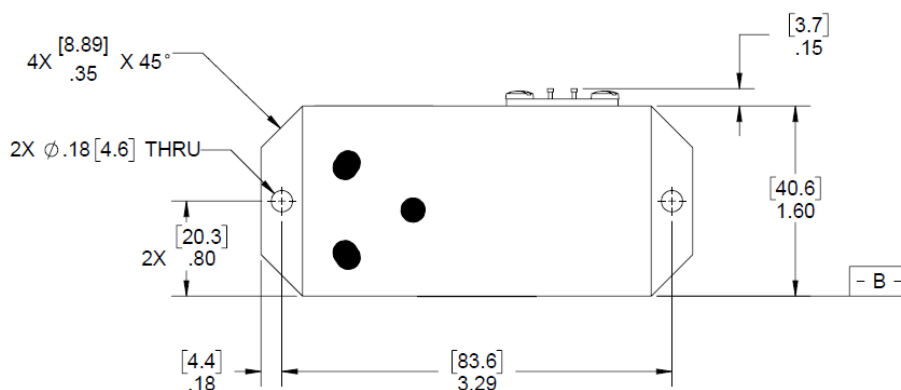
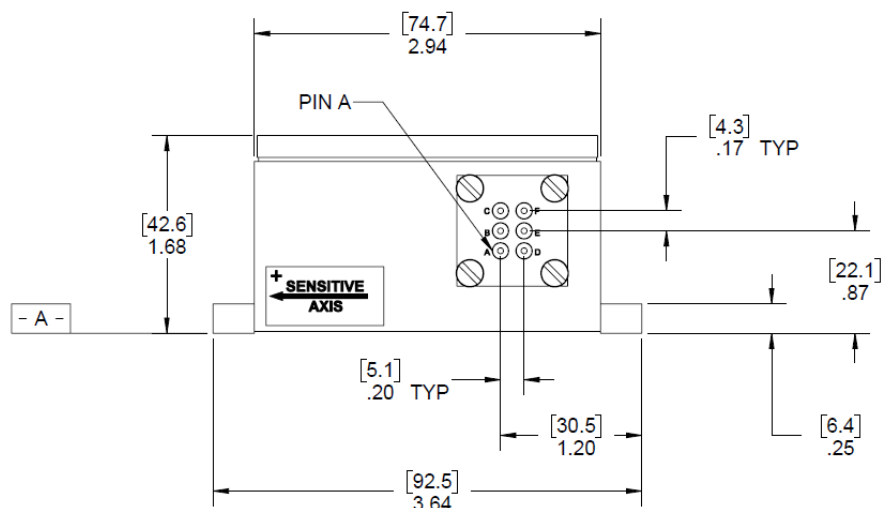
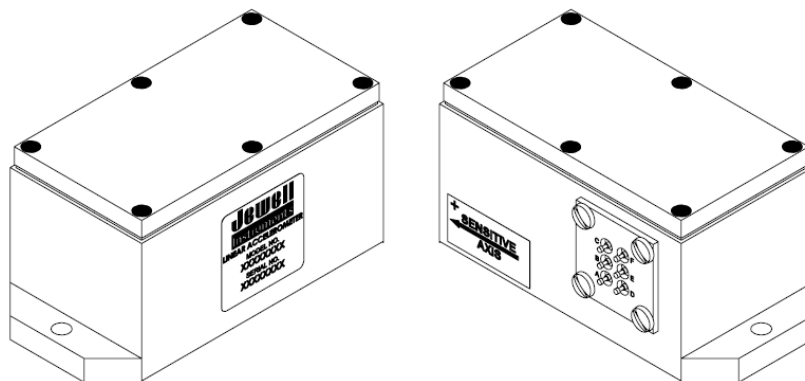


NOTES:

- DATUM - A - AND - B - ARE DEFINED AS REFERENCE SURFACES.

# LSLR Ultra-Low Range Accelerometer +/-5V, 0-5V or 4-20mA Output

## Outline Drawing: Pin Terminal Version

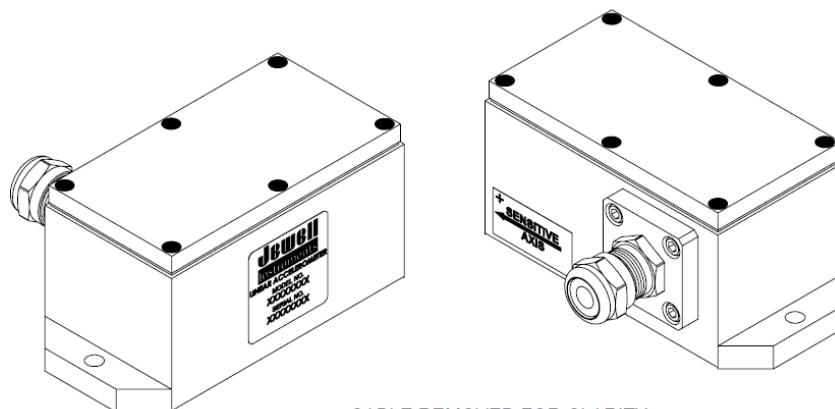


NOTES:

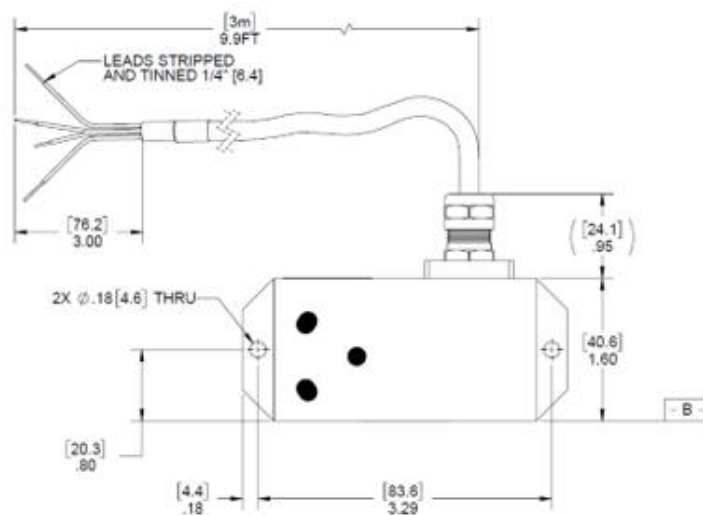
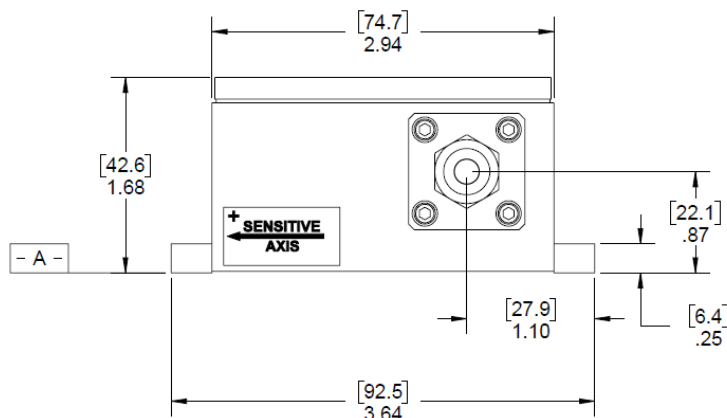
1. DATUM **- A -** AND **- B -** ARE DEFINED AS REFERENCE SURFACES.

# LSLR Ultra-Low Range Accelerometer +/-5V, 0-5V or 4-20mA Output

## Outline Drawing: Wired Version



CABLE REMOVED FOR CLARITY

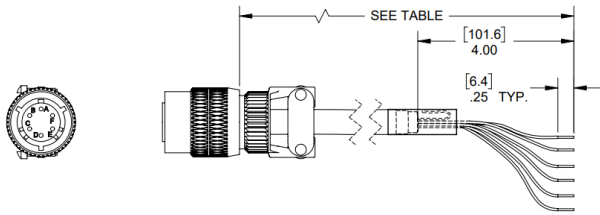


NOTES:

1. DATUM **- A -** AND **- B -** ARE DEFINED AS REFERENCE SURFACES.

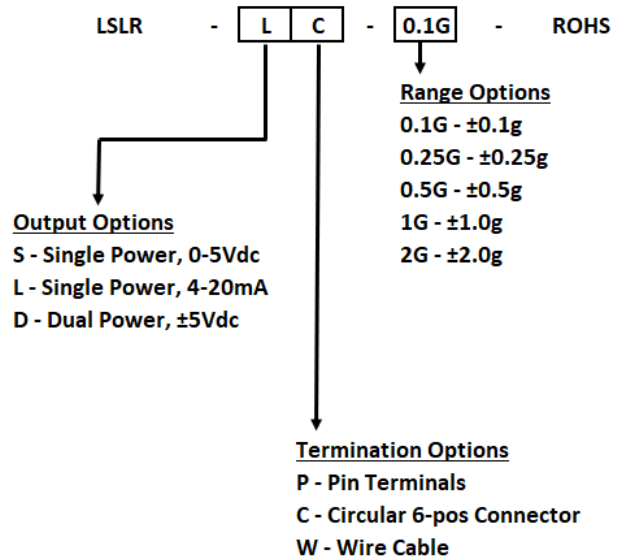
# LSLR Ultra-Low Range Accelerometer +/-5V, 0-5V or 4-20mA Output

## Accessories:



PART #	MODEL #	LENGTH ft (m)
879605-001	DSI-CBL-006-1	6 (1.83)
879605-002	DSI-CBL-010-1	10 (3.05)
879605-007	DSI-CBL-02M-1	6.56 (2)
879605-008	DSI-CBL-03M-1	9.84 (3)

## LSLR Ordering Information:



Range	Output	Connection	Model #	Part #
±0.1g	0-5V (S)	Connector (C)	LSLR-SC-0.1G-ROHS	02550417-101-ROHS
		Pin Terminal (P)	LSLR-SP-0.1G-ROHS	02550415-101-ROHS
		Wire (W)	LSLR-SW-0.1G-ROHS	02550416-101-ROHS
	±5V (D)	Connector (C)	LSLR-DC-0.1G-ROHS	02550417-201-ROHS
		Pin Terminal (P)	LSLR-DP-0.1G-ROHS	02550415-201-ROHS
		Wire (W)	LSLR-DW-0.1G-ROHS	02550416-201-ROHS
	4-20mA (L)	Connector (C)	LSLR-LC-0.1G-ROHS	02550417-301-ROHS
		Pin Terminal (P)	LSLR-LP-0.1G-ROHS	02550415-301-ROHS
		Wire (W)	LSLR-LW-0.1G-ROHS	02550416-301-ROHS
±0.25g	0-5V (S)	Connector (C)	LSLR-SC-0.25G-ROHS	02550417-102-ROHS
		Pin Terminal (P)	LSLR-SP-0.25G-ROHS	02550415-102-ROHS
		Wire (W)	LSLR-SW-0.25G-ROHS	02550416-102-ROHS
	±5V (D)	Connector (C)	LSLR-DC-0.25G-ROHS	02550417-202-ROHS
		Pin Terminal (P)	LSLR-DP-0.25G-ROHS	02550415-202-ROHS
		Wire (W)	LSLR-DW-0.25G-ROHS	02550416-202-ROHS
	4-20mA (L)	Connector (C)	LSLR-LC-0.25G-ROHS	02550417-302-ROHS
		Pin Terminal (P)	LSLR-LP-0.25G-ROHS	02550415-302-ROHS
		Wire (W)	LSLR-LW-0.25G-ROHS	02550416-302-ROHS
±0.5g	0-5V (S)	Connector (C)	LSLR-SC-0.5G-ROHS	02550417-103-ROHS
		Pin Terminal (P)	LSLR-SP-0.5G-ROHS	02550415-103-ROHS
		Wire (W)	LSLR-SW-0.5G-ROHS	02550416-103-ROHS
	±5V (D)	Connector (C)	LSLR-DC-0.5G-ROHS	02550417-203-ROHS
		Pin Terminal (P)	LSLR-DP-0.5G-ROHS	02550415-203-ROHS
		Wire (W)	LSLR-DW-0.5G-ROHS	02550416-203-ROHS
	4-20mA (L)	Connector (C)	LSLR-LC-0.5G-ROHS	02550417-303-ROHS
		Pin Terminal (P)	LSLR-LP-0.5G-ROHS	02550415-303-ROHS
		Wire (W)	LSLR-LW-0.5G-ROHS	02550416-303-ROHS

Range	Output	Connection	Model #	Part #
±1g	0-5V (S)	Connector (C)	LSLR-SC-1G-ROHS	02550417-104-ROHS
		Pin Terminal (P)	LSLR-SP-1G-ROHS	02550415-104-ROHS
		Wire (W)	LSLR-SW-1G-ROHS	02550416-104-ROHS
	±5V (D)	Connector (C)	LSLR-DC-1G-ROHS	02550417-204-ROHS
		Pin Terminal (P)	LSLR-DP-1G-ROHS	02550415-204-ROHS
		Wire (W)	LSLR-DW-1G-ROHS	02550416-204-ROHS
4-20mA (L)	Connector (C)	LSLR-LC-1G-ROHS	02550417-304-ROHS	
	Pin Terminal (P)	LSLR-LP-1G-ROHS	02550415-304-ROHS	
	Wire (W)	LSLR-LW-1G-ROHS	02550416-304-ROHS	
±2g	0-5V (S)	Connector (C)	LSLR-SC-2G-ROHS	02550417-105-ROHS
		Pin Terminal (P)	LSLR-SP-2G-ROHS	02550415-105-ROHS
		Wire (W)	LSLR-SW-2G-ROHS	02550416-105-ROHS
	±5V (D)	Connector (C)	LSLR-DC-2G-ROHS	02550417-205-ROHS
		Pin Terminal (P)	LSLR-DP-2G-ROHS	02550415-205-ROHS
		Wire (W)	LSLR-DW-2G-ROHS	02550416-205-ROHS
4-20mA (L)	Connector (C)	LSLR-LC-2G-ROHS	02550417-305-ROHS	
	Pin Terminal (P)	LSLR-LP-2G-ROHS	02550415-305-ROHS	
	Wire (W)	LSLR-LW-2G-ROHS	02550416-305-ROHS	