

## Installation:

NOSHOK pressure transmitters/transducers may be mounted in any plane with negligible effect on performance. Although these units are designed and manufactured to withstand substantial shock and vibration, it is recommended that they be mounted in an area of minimal vibration. Always use a wrench on the wrench flats when installing. NEVER use a pipe wrench on the housing or in the area of the electrical connection.

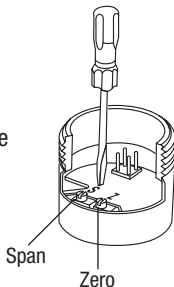
## Maintenance/Calibration:

NOSHOK pressure transmitters/transducers require no maintenance. Recalibration is dependent on the users Quality Assurance Program. If no program is in place, NOSHOK recommends a 1 year cycle.

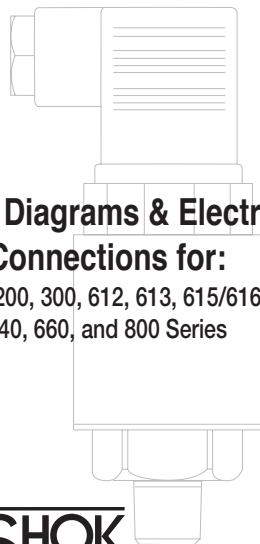
## Alignment Procedure (applies only to 100, 200, 615/616, and 640 series):

Using a pressure source and meter with adequate accuracy, perform the following steps:

- Open sensor
- With no pressure applied, adjust the "Z" potentiometer for the correct Zero output
- Apply the correct full scale pressure to the unit
- Adjust the "S" potentiometer for the correct Span output



# NOSHOK TRANSMITTERS TRANSDUCERS



## Wiring Diagrams & Electrical Connections for:

100, 200, 300, 612, 613, 615/616,  
640, 660, and 800 Series

# NOSHOK

## CORPORATE HEADQUARTERS

1010 West Bagley Rd. • Berea, OH 44017

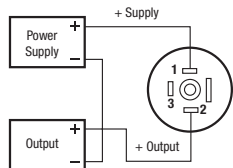
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E-mail: [noshok@noshok.com](mailto:noshok@noshok.com)

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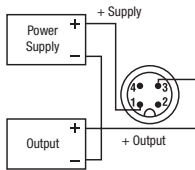
## SERIES 100

Current output, 2 wire



**Wiring -  
Mini-Hirschmann  
connector**

**Wiring -  
M12 x 1 4-pin  
round connector**



**Load Limitations  
4 mA to 20 mA Output Only**

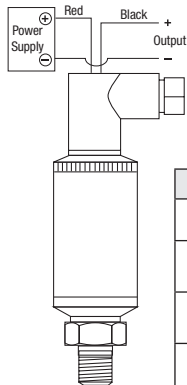
$$V_{min} = 10V + (.020 \times RL)$$

$$RL = R_s + R_w$$

$R_L$  = Loop Resistance (ohms)

$R_s$  = Sense Resistance (ohms)

$R_w$  = Wire Resistance (ohms)

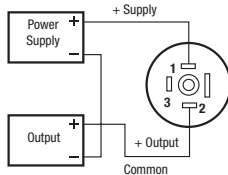


**2 WIRE  
DIAGRAM  
EXAMPLE**

Series 100	4 mA to 20 mA	
CONNECTION TYPE (CODE)	+ SUPPLY	+ OUTPUT
Mini-Hirschmann (7)	1	2
Mini-Hirschmann w/ Cable (1)	Red	Black
4 or 6 Pin Bendix (2 or 3)	A	B
1/2" NPT Conduit w/ Cable (6)	Red	Black
M12 x 1, 4-Pin (25)	1	3
Integral Cable (36)	Red	Black

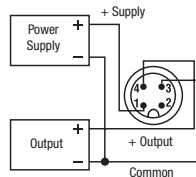
## SERIES 200

Voltage output, 3 wire



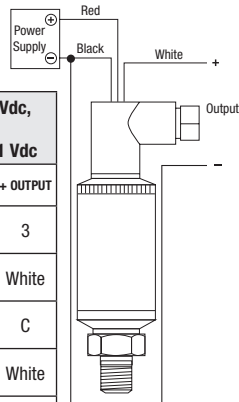
**Wiring -  
Mini-Hirschmann  
connector**

**Wiring -  
M12 x 1 4-pin  
round connector**



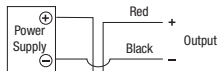
**3 WIRE WIRING  
DIAGRAM EXAMPLE**

Series 200	0-5 Vdc, 1-5 Vdc, 1-6 Vdc, 0-10 Vdc, 1-11 Vdc		
	+ SUPPLY	COMMON	+ OUTPUT
Mini-Hirschmann (7)	1	2	3
Mini-Hirschmann w/ Cable (1)	Red	Black	White
4 or 6 Pin Bendix (2 or 3)	A	B	C
1/2" NPT Conduit w/ Cable (6)	Red	Black	White
M12 x 1, 4-Pin (25)	1	3	4
Integral Cable (36)	Red	Black	White

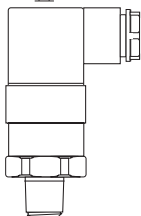


## SERIES 300

### 2 WIRE WIRING DIAGRAM EXAMPLE



Series 300	4 mA to 20 mA	
CONNECTION TYPE (CODE)	+ SUPPLY	+ OUTPUT
Hirschmann (7, 8 or 14)	1	2
Hirschmann w/ Cable (1)	Red	Black
M12 x 1, 4-Pin (25)	1	3
Integral Cable (36)	Brown	Blue



### Load Limitations 4 mA to 20 mA Output Only

$$V_{min} = 10V + (.020 \times R_L)$$

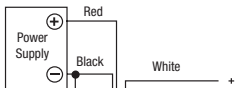
$$R_L = R_S + R_W$$

$R_L$  = Loop Resistance (ohms)

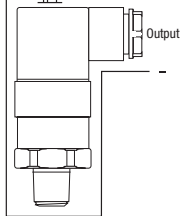
$R_S$  = Sense Resistance (ohms)

$R_W$  = Wire Resistance (ohms)

### 3 WIRE WIRING DIAGRAM EXAMPLE

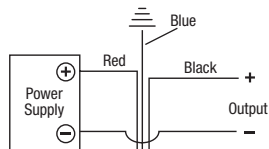


Series 300	0-5 Vdc, 1-5 Vdc, 1-6 Vdc, 0-10 Vdc, 1-11 Vdc		
CONNECTION TYPE (CODE)	+ SUPPLY	COMMON	+ OUTPUT
Hirschmann (7, 8 or 14)	1	2	3
Hirschmann w/ Cable (1)	Red	Black	White
M12 x 1, 4-Pin (25)	1	3	4
Integral Cable (36)	Brown	Blue	Black



## SERIES 612 & 613

### 2 WIRE WIRING DIAGRAM EXAMPLE



Series 612/613	4 mA to 20 mA		
CONNECTION TYPE	+ SUPPLY	+ OUTPUT	CASE GROUND
Cable	Red	Black	Blue



### Load Limitations

#### 4 mA to 20 mA Output Only

$$V_{min} = [10V + (.020 \times R_L)] - 0.04354 \frac{\rho}{\pi r^2} \times \text{cable length}$$

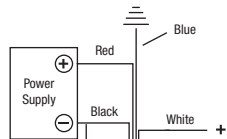
$$R_L = R_S + R_W$$

$R_L$  = Loop Resistance (ohms)

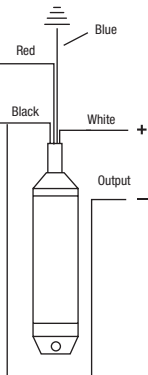
$R_S$  = Sense Resistance (ohms)

$R_W$  = Wire Resistance (ohms)

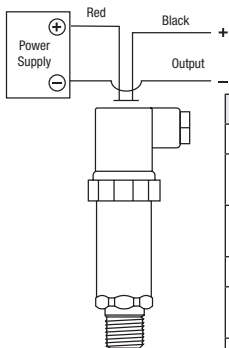
### 3 WIRE WIRING DIAGRAM EXAMPLE



Series 612/613	0-5 Vdc, 0-10 Vdc, 0.5 to 2.5 Vdc			
CONNECTION TYPE	+ SUPPLY	COMMON	+ OUTPUT	CASE GROUND
Cable	Red	Black	White	Blue



## SERIES 615/616



### 2 WIRE WIRING DIAGRAM EXAMPLE

Series 615/616	4 mA to 20 mA	
	+ SUPPLY	+ OUTPUT
Hirschmann (8 or 14)	1	2
Hirschmann w/ Cable (1)	Red	Black
6 Pin Bendix (3)	A	B
1/2" NPT Conduit w/ Cable (6)	Red	Black
M12 x 1, 4-Pin (25)	1	3
Integral Cable (36)	Red	Black

### Load Limitations 4 mA to 20 mA Output Only

$$V_{min} = 10V + (.020 \times R_L)$$

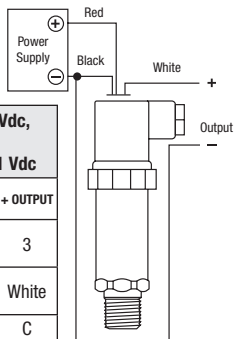
$$R_L = R_s + R_w$$

$R_L$  = Loop Resistance (ohms)

$R_s$  = Sense Resistance (ohms)

$R_w$  = Wire Resistance (ohms)

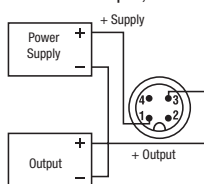
### 3 WIRE WIRING DIAGRAM EXAMPLE



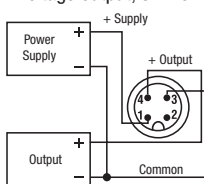
Series 615/616	0-5 Vdc, 1-5 Vdc, 1-6 Vdc, 0-10 Vdc, 1-11 Vdc		
	+ SUPPLY	COMMON	+ OUTPUT
Hirschmann (8 or 14)	1	2	3
Hirschmann w/ Cable (1)	Red	Black	White
6 Pin Bendix (3)	A	B	C
1/2" NPT Conduit w/ Cable (6)	Red	Black	White
M12 x 1, 4-Pin (25)	1	3	4
Integral Cable (36)	Red	Black	White

## SERIES 640

### Current output, 2 wire



### Voltage output, 3 wire



### Wiring - M12 x 1 4-pin round connector

Series 640	4 mA to 20 mA	
	+ SUPPLY	+ OUTPUT
Hirschmann (8 or 14)	1	2
Hirschmann w/ Cable (1)	Red	Black
6 Pin Bendix (3)	A	B
M12 x 1, 4-Pin (25)	1	3
Integral Cable (36)	Brown	Blue

### Load Limitations 4 mA to 20 mA Output Only

$$V_{min} = 10V + (.020 \times R_L)$$

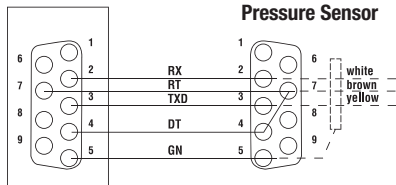
$$R_L = R_s + R_w$$

$R_L$  = Loop Resistance (ohms)

$R_s$  = Sense Resistance (ohms)

$R_w$  = Wire Resistance (ohms)

### RS 232 Interface



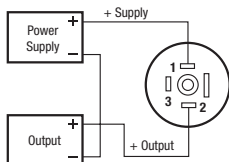
### Pressure Sensor

Series 640	0-5 Vdc, 0-10 Vdc, 0-20 mA		
	+ SUPPLY	COMMON	+ OUTPUT
Hirschmann (8 or 14)	1	2	3
Hirschmann w/ Cable (1)	Red	Black	White
6 Pin Bendix (3)	A	B	C
M12 x 1, 4-Pin (25)	1	3	4
Integral Cable (36)	Brown	Black	Blue

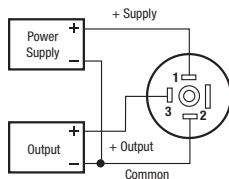
# SERIES 660

## Wiring - Mini-Hirschmann connector

Current output, 2 wire



Voltage output, 3 wire



### Load Limitations

#### 4 mA to 20 mA Output Only

$$V_{min} = 10V + (.020 \times R_L)$$

$$R_L = R_s + R_w$$

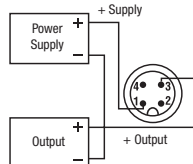
$R_L$  = Loop Resistance (ohms)

$R_s$  = Sense Resistance (ohms)

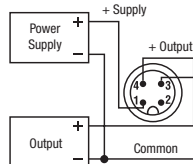
$R_w$  = Wire Resistance (ohms)

## Wiring - M12 x 1 4-pin round connector

Current output, 2 wire



Voltage output, 3 wire

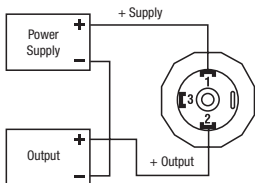


Series 660	4 mA to 20 mA	
CONNECTION TYPE (CODE)	+ SUPPLY	+ OUTPUT
Mini-Hirschmann (7)	1	2
Mini-Hirschmann w/ Cable (1)	Red	Black
M12 x 1, 4-Pin (25)	1	3
Integral Cable (36)	Brown	Green

Series 660	1-5 Vdc, 0.1-10 Vdc		
CONNECTION TYPE (CODE)	+ SUPPLY	COMMON	+ OUTPUT
Mini-Hirschmann (7)	1	2	3
Mini-Hirschmann w/ Cable (1)	Red	Black	White
M12 x 1, 4-Pin (25)	1	3	4
Integral Cable (36)	Brown	Green	White

# SERIES 800

4 mA to 20 mA, 2 wire



## Load Limitations

### 4 mA to 20 mA Output Only

$$V_{min} = 10V + (.020 \times R_L)$$

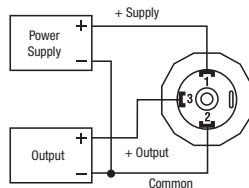
$$R_L = R_s + R_w$$

$R_L$  = Loop Resistance (ohms)

$R_s$  = Sense Resistance (ohms)

$R_w$  = Wire Resistance (ohms)

0 Vdc to 10 Vdc, 3 wire



Series 800	4 mA to 20 mA	
CONNECTION TYPE (CODE)	+ SUPPLY	+ OUTPUT
Hirschmann (8 or 14)	1	2
Hirschmann w/ Cable (1)	Red	Black
M12 x 1, 4-Pin (25)	1	3

Series 800	0-10 Vdc		
CONNECTION TYPE (CODE)	+ SUPPLY	COMMON	+ OUTPUT
Hirschmann (8 or 14)	1	2	3
Hirschmann w/ Cable (1)	Red	Black	White
M12 x 1, 4-Pin (25)	1	3	4