952 BlueOx

Magnetostrictive LDT
for High Shock and Vibration Areas

Gemco brand position sensing products have been known for survival in harsh industrial environments. We have taken over twenty years experience in magnetostrictive linear sensors and married it with our understanding of rugged industrial sensors to develop the BlueOx LDT as the industry's first truly rugged magnetostrictive linear transducer.

The BlueOx LDT is lab tested and field proven to stand up to high shock and vibration. With test results of 2,000 G's of shock and 30 G's of random vibration without false signals or mechanical damage, the BlueOx LDT is ready to perform on the most demanding applications.

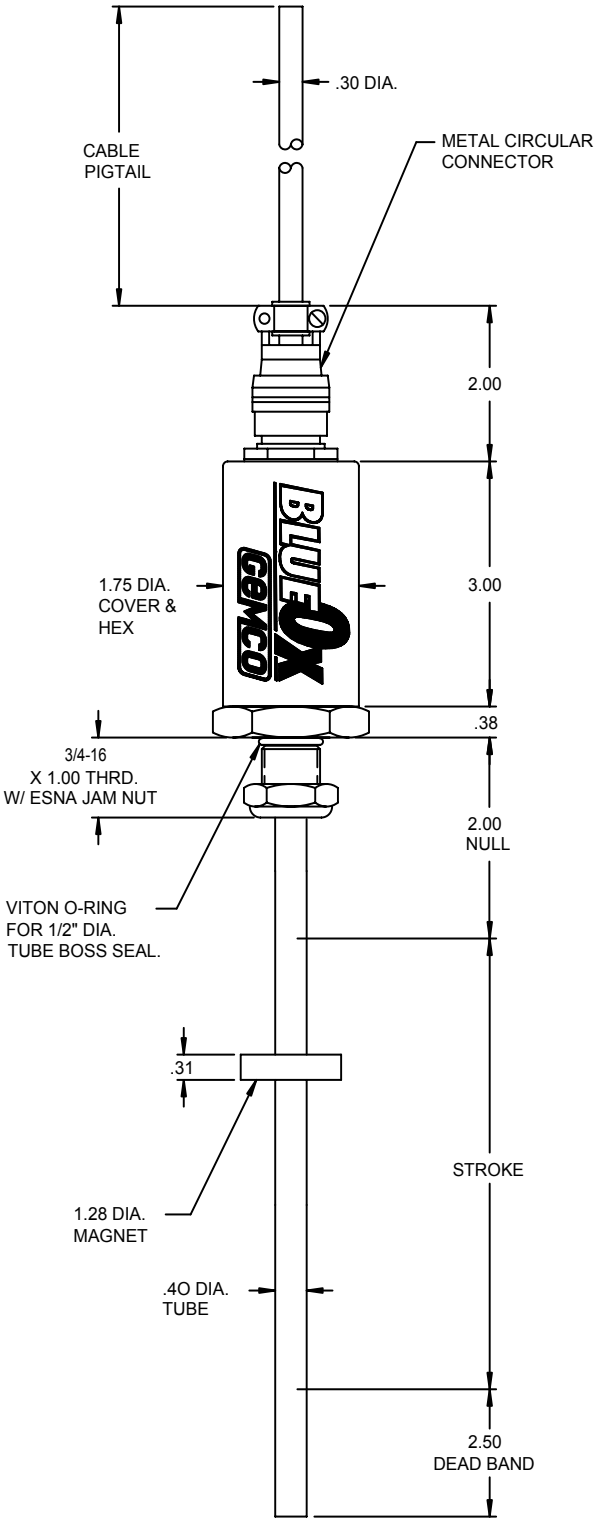
In addition to its ability to withstand shock and vibration, the BlueOx LDT is rugged in other ways. Sensing tube construction is welded stainless steel, suitable for insertion in 5000 PSI hydraulic cylinders. The electronics are enclosed behind an aluminum housing with O-ring seals for IP67 indoor applications (Type Nema 6 rating and stainless steel covers and connectors are available as a special option).

The Series 952 BlueOx is available with Analog, Control Pulse, Variable Pulse or RS422 Start/Stop outputs. The Series 952 is compatible with PLC interface cards and our Series 1746 LDT Interface Card. The 16 bit resolution analog output is programmable over the entire active stroke length. The units can easily be changed in the field from a 0 - 10 VDC to a 10 - 0 VDC or a 4 - 20 mA to a 20 - 4 mA. As an added feature, the optional differential analog output allows the distance between two magnets to be measured.

The BlueOx, with its high resolution and rugged construction, is at home in heavy duty areas such as lumber mills, steel mills, stamping plants, assembly automation, material handling, robotics and any other industry where highly accurate and reliable continuous linear position sensing is needed.

Specifications	
Input Voltage	Analog: 13.5 - 30 VDC Digital: 13.5 - 26.4 VDC, or +/- 15 VDC
Current Draw	< 200 mA at 15 VDC
Output	Analog: 0 - 10 VDC or 10 - 0 VDC, 4 - 20 mA or 20 - 4 mA Digital: Start/Stop, Control Pulse or Pulse-Width Modulated/ Variable Pulse (PWM/VP)
Resolution **1) Internal** **2) Analog Output**	 0.001" 16 Bit (1 part in 65,535)
Non-linearity/Accuracy	+/-0.05% of Full Scale
Repeatability	+/-0.006% of Full Scale (+/- .002 inch min.)
Hysteresis	+/-.02% of Full Scale
Operating Temperature **1) Head Electronics** **2) Guide Tube**	 -40° to 158° F (-40° to 70° C) -40° to 221° F (-40° to 105° C)
Operating Pressure	5000 psi Operational, 10,000 psi Spike
Span Length	2" - 168"
Null Zone	2"
Dead Zone	2.5"
Connectors	12mm Micro 5 Pin, CE Approved (Analog Only), 10 Pin 1/4 Turn MS Style Connector, Potted Pigtail Assembly, Optional Temposonics II & III Connectors
Update Time **Analog** **Digital**	 1ms (Stroke Lengths 1" to 50") 2ms (Stroke Lengths 51" to 100") 3ms (Stroke Lengths 101" to 150") 4ms (Stroke Lengths 151" to 168") Controller Dependent
Enclosure	IP67
Approvals	CE (Analog 12mm Micro 5 Pin Connector Only)
Specifications are subject to change without notice. Specifications are based on a typical 36" LDT .	

Dimension Drawing



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Part Numbering

952A — V0 — 0120 — X — X — E

952A
Analog BlueOx

V0
Output Type
V0 = 0 - 10 VDC
V1 = 10 - 0 VDC
C4 = 4 - 20 mA
C2 = 20 - 4 mA
D0 = Differential 0 - 10 VDC*
D1 = Differential 4 - 20 mA *
*Analog differential output is the difference between two magnets. Minimum distance is 2.5”.

0120
Stroke in Inches
Insert stroke in inches to 0.1 inch. Enter as a four-place number.
Example: 12.0 in stroke entered as 0120. To convert a metric stroke in millimeters, multiply millimeter value by 0.03937 to arrive at inch value. On differential output units (D0 or D1) the active measuring range will be 2.5” less than the specified stroke due to the 2.5” magnet to magnet separation distance requirement.

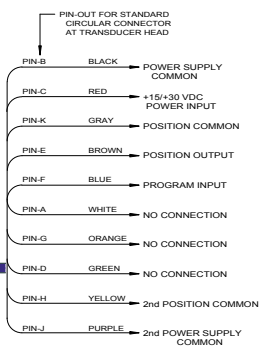
X
Null Dimension
X□= Standard 2 inch Null
N = Insert non-standard Null over 2 inches
(Add non-standard portion of Null length to stroke length to calculate list price)

X
Dead Zone
X = Standard Dead Zone of 2.5 inches
D□= Insert non-standard Dead Zone over 2.5 inches
(Add non-standard portion of Dead Zone length to stroke length to calculate list price)

E
Connector Style
S = Standard 12mm 5 pin Euro Connector (CE Approved)
E = Environmental MS Connector*
C□= Potted Pigtail Cable Assembly. Insert Pigtail length in feet.
T = Threaded Metal Connector (fits MTS - “RB” on Tempo II™ or III)
Q = Bayonet Style Connector (fits MTS - “RC” on Tempo II™ or III)
M = 1/4 Turn Quick Disconnect (fits MTS - “MS” on Tempo II™ or III)
Consult factory for other connector options.

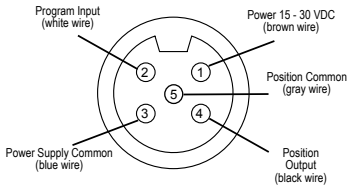
* If option S or E (environmental connector) is selected, mating connector and/or pigtail must be ordered separately. **Note 1:** On unsupported stroke lengths greater than 4 feet, rod support bracket(s) and a special magnet should be used. **Note 2:** Specify magnet as separate line item (standard magnet is SD0400800).

Wiring Diagram Option “E”



Wiring Diagram Option “S”

Use Euro Connector (micro 12 mm single keyway) cordsets, available from most connector manufacturers or purchased from Ametek.



LDT Connector View

952

Part Numbering

952CP — **0120** — **X** — **X** — **E**

952CP — **Control Pulse BlueOx**

Stroke in Inches
Insert stroke in inches to 0.1 inch. Enter as a four-place number. **Example:** 12.0 in stroke entered as 0120. To convert a metric stroke in millimeters, multiply millimeter value by 0.03937 to arrive at inch value.

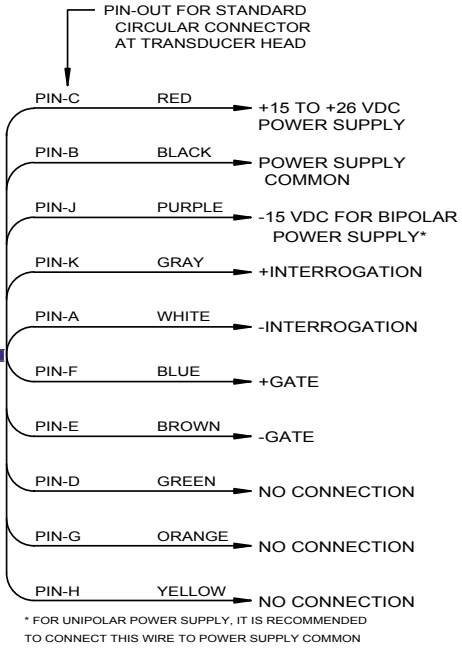
Null Dimension
X = Standard 2 inch Null
N□ = Insert non-standard Null over 2 inches
(Add non-standard portion of Null length to stroke length to calculate list price)

Dead Zone
X = Standard Dead Zone of 2.5 inches
D□ = Insert non-standard Dead Zone over 2.2 inches
(Add non-standard portion of Dead Zone length to stroke length to calculate list price)

Connector Style
E = Environmental MS Connector*
C□ = Potted Pigtail Cable Assembly. Insert Pigtail length in feet.

* If option E (environmental connector) is selected, mating connector and/or pigtail must be ordered separately. **Note 1:** On unsupported stroke lengths greater than 4 feet, rod support bracket(s) and a special magnet should be used. **Note 2:** Specify magnet as separate line item (standard magnet is SD0400800).

Wiring Diagram



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Part Numbering

952VP — 0120 — X — X — E — I — 001

952VP — Variable Pulse BlueOx

0120 — Stroke in Inches

Insert stroke in inches to 0.1 inch. Enter as a four-place number. **Example:** 12.0 in stroke entered as 0120. To convert a metric stroke in millimeters, multiply millimeter value by 0.03937 to arrive at inch value.

X — Null Dimension

X = Standard 2 inch Null
N□= Insert non-standard Null over 2 inches
(Add non-standard portion of Null length to stroke length to calculate list price)

X — Dead Zone

X = Standard Dead Zone of 2.5 inches
D□= Insert non-standard Dead Zone over 2.5 inches
(Add non-standard portion of Dead Zone length to stroke length to calculate list price)

E — Connector Style

E = Environmental MS Connector*
C□= Potted Pigtail Cable Assembly. Insert Pigtail length in feet.
T = Threaded Metal Connector (fits MTS - "RB" on Tempo II™ or III)
Q = Bayonet Style Connector (fits MTS - "RC" on Tempo II™ or III)
M = 1/4 Turn Quick Disconnect (fits MTS - "MS" on Tempo II™ or III)

I — Interrogation Mode

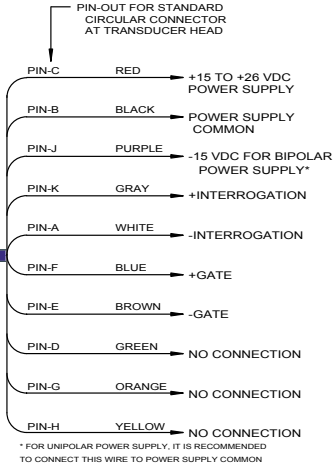
I = Internal Interrogation
E = External Interrogation

001 — Recirculations Required

001 (standard) to 127

* If option E (environmental connector) is selected, mating connector and/or pigtail must be ordered separately. **Note 1:** On unsupported stroke lengths greater than 4 feet, rod support bracket(s) and a special magnet should be used. **Note 2:** Specify as magnet separate line item (standard magnet is SD0400800).

Wiring Diagram



Part Numbering

952RS — 0120 — X — X — E

952RS
RS422 Start/Stop with Interrogation Start Sequence Pulse BlueOx

Stroke in Inches
Insert stroke in inches to 0.1 inch. Enter as a four-place number. **Example:** 12.0 in stroke entered as 0120. To convert a metric stroke in millimeters, multiply millimeter value by 0.03937 to arrive at inch value.

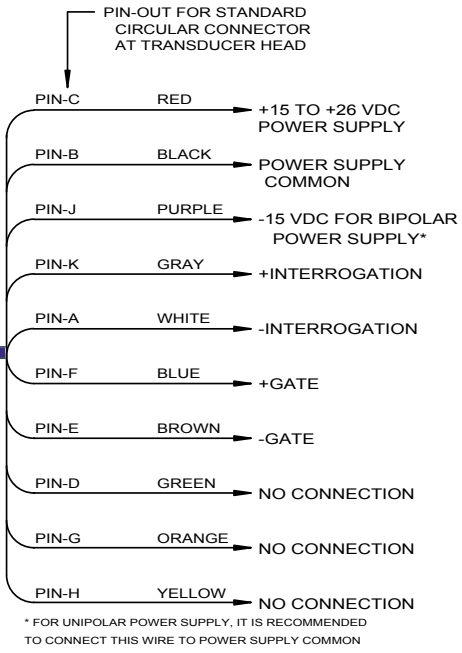
Null Dimension
X = Standard 2 inch Null
N□= Insert non-standard Null over 2 inches
(Add non-standard portion of Null length to stroke length to calculate list price)

Dead Zone
X = Standard Dead Zone of 2.5 inches
D□= Insert non-standard Dead Zone over 2.5 inches
(Add non-standard portion of Dead Zone length to stroke length to calculate list price)

Connector Style
E = Environmental MS Connector*
C□ = Potted Pigtail Cable Assembly. Insert Pigtail length in feet.
T = Threaded Metal Connector (fits MTS - "RB" on Tempo II™ or III)
Q = Bayonet Style Connector (fits MTS - "RC" on Tempo II™ or III)
M = 1/4 Turn Quick Disconnect (fits MTS - "MS" on Tempo II™ or III)

* If option E (environmental connector) is selected, mating connector and/or pigtail must be ordered separately. **Note1:** On unsupported stroke lengths greater than 4 feet, rod support bracket(s) and a special magnet should be used. **Note 2:** Specify magnet as separate line item (standard magnet is SD0400800).

Wiring Diagram



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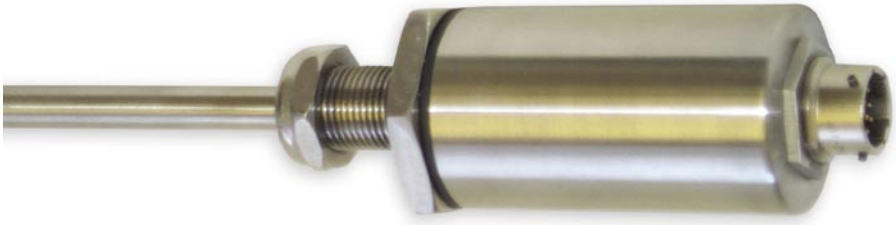
952 Connector Options

Option "T"
Threaded Metal Connector
(MTS - "RB" on Tempo II & III)

Option "Q"
Bayonet Style Connector
(MTS - "RC" on Tempo II & III)

Option "M"
1/4 Turn Quick Disconnect Connector
(MTS - "MS" on Tempo II & III)



Stainless Steel Head
Cover and Connector
(Consult Factory)

Options

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