



ELECTRO-SENTRY™

Multi-Leg Hazard Monitoring System

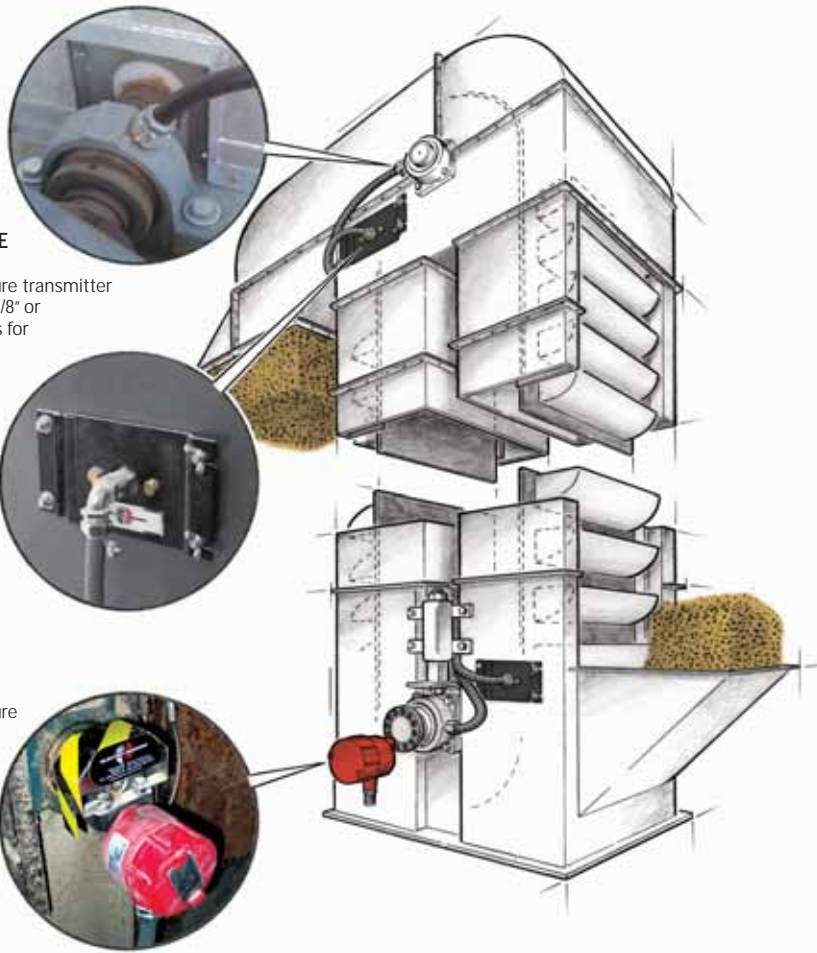
Combines the key elements of shaft speed, belt alignment and bearing temperature into a turnkey system, with the Command Center™ for visual monitoring and fast alarm identification.

- Diagnose alarm location and condition in under 10 seconds
- Sensors designed for hazardous locations (CL II, Div. 1, Groups E, F & G)
- 4-20mA sensors connect directly to PLC or data acquisition inputs
- Real time trending of sensor data can be downloaded to external network
- No calibration — all sensors ready to use and simple to retrofit
- Easy to troubleshoot — no special training required
- No proprietary “Black Box” or custom software required
- Versatile system can take plugged chute, drag conveyor and other sensor inputs
- System can be expanded and will not become obsolete



TT420Z-LT BEARING TEMPERATURE

The TT420Z is a 2-wire loop-powered 4-20mA temperature transmitter that mounts into standard 1/8" or 1/4" grease fitting (Zerk) taps for bearing temperature measurement. This design also allows probe depth adjustment for a wide range of bearing sizes.



TT420S-LT BELT ALIGNMENT

The TT420S is a 2-wire loop-powered 4-20mA temperature transmitter that screws into the rear of any brass rub-block with a 3/8" - 16 tap.

FB420 SHAFT SPEED

The FB420 is a feedback sensor that mounts onto the elevator tail pulley to measure shaft speed. Housed in a rugged, XP enclosure the FB420 outputs a 4-20mA signal across the RPM range of the shaft, and has programmable setpoint relay functions.

Command Center™
Touch Screen for
Easy Visual Monitoring
and
Fast Alarm Identification



Open-architecture design allows the system to scale up or down very easily. Monitor points can be added or subtracted from the standard system at the Command Center — up to 12 legs can be accommodated. 4-20mA loop-powered sensors provide immunity to electrical noise, require no calibration, and enable easy PLC set-up. The Command Center was designed for ease of use by the operator; in under 10 seconds a problem can be identified and pinpointed with 2 or 3 simple steps using the touch screen display shown above.



Interlock with Existing Plant Control System or Stand Alone for Fault Condition Alarm and Shutdown.

Specifications • Command Center

System Input Power 115 Vac Standard
24 Vdc, 230 Vac Optional

Standard System Includes:

- Touchscreen Panel Operator Interface
- Micrologix 1500 PLC
- Inputs for Analog Sensors
- Digital I/O to Interface with Plant Control System
- USB Port for Downloading Trend Data
- DH-485, DeviceNet, EtherNet/IP Connectivity Modules Available for Micrologix PLC

Enclosure NEMA 12 / NEMA 4
Contact Factory for Other Options



Specifications • FB420 Shaft Speed Feedback Sensor

Input Power
Isolated +24 VDC 55 mA with 20 mA signal,
and relay energized
External Fuse 0.1A slo-blo

Input Signal
Type Magnetic Alternating
Range of Operation (w/8 PPR) 0.75 RPM to 9999 RPM
Input Frequency Range 0.1 Hz to 9999 Hz

Gap Distance 1/16" to 1/4"

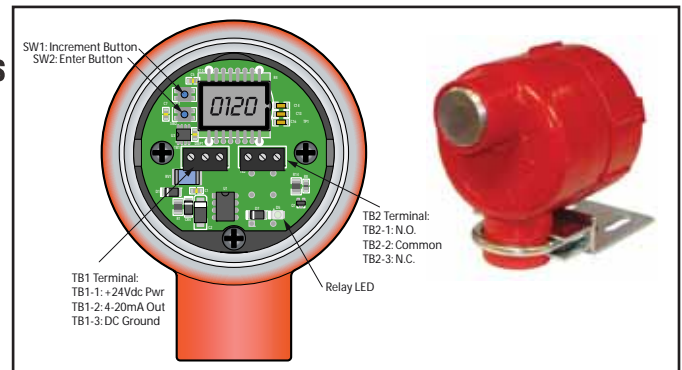
Analog Output Signal
Type of Output 4-20 mA
4 mA at min rpm
20 mA at max rpm.

Relay Output
Form C SPDT 30 VDC 5 amps
250 VAC 5 amps
Overspeed/underspeed "fail safe" alarm state is relay de-energized

Physical Environment
Operating Temp -40° C → + 65° C (-40°F → +149°F)
Housing & Cover Cast aluminum.
Class I, Groups C & D
Class II, Groups E, F, & G

Maximum Signal Distance with 3-conductor cable
Using Relay 2300 Ft.
Not Using Relay 3800 Ft.

Part Number
FB420 Shaft Speed Sensor 800-045000



Specifications • ST420-DI Shaft Tachometer

Specifications
Sensor Gap 1/4" ± 1/8"
Vin (min → max) 8-30 Vdc (nominal
loop power: 24 Vdc)
Operating Temp -20°C → +85°C (-4°F → +185°F)
Accuracy Max error at 25°C ± 0.25%
Max error over operating
temperature ± 0.50%
Output Response Time < 9mS

Cable(24 AWG)
Color Code Brown (V+)
Black (V-)
Length 10 feet

Dimensions
Length 95mm (3.74")
Diameter 18mm (0.71")

Protection
Class II (E, F, G) Div. 1 Intrinsically Safe design for use in Intrinsically Safe circuits. Reverse-wiring protected. NEMA 4X



Diagnose Alarm Condition AND Location In Under 10 Seconds!

Simplify Maintenance and Diagnostic Procedures



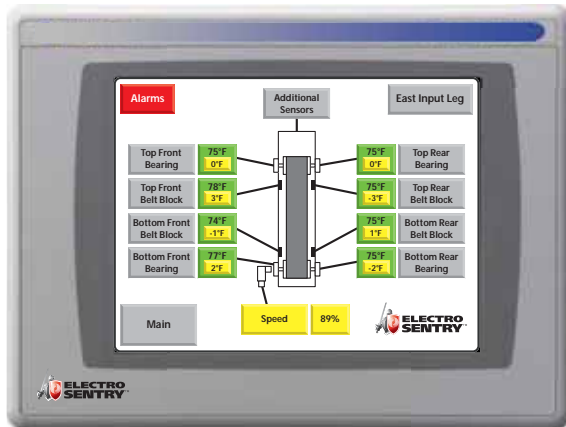
Normal Operation
"Home" Screen View — No Alarms

East Input Leg
Changes Due To
Alarm Condition



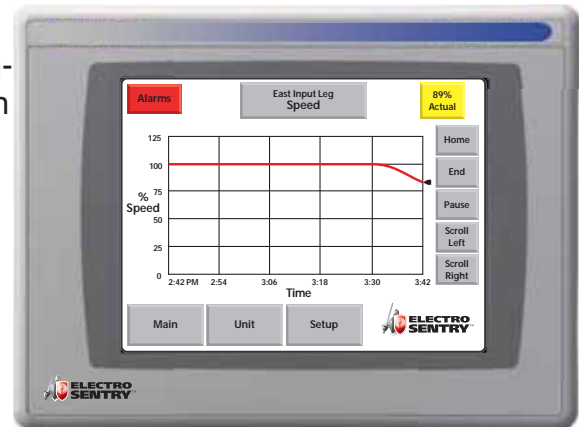
Alarm Condition on East Input Leg
Plant Location Alarm View

Touch Flashing
Leg Location But-
ton



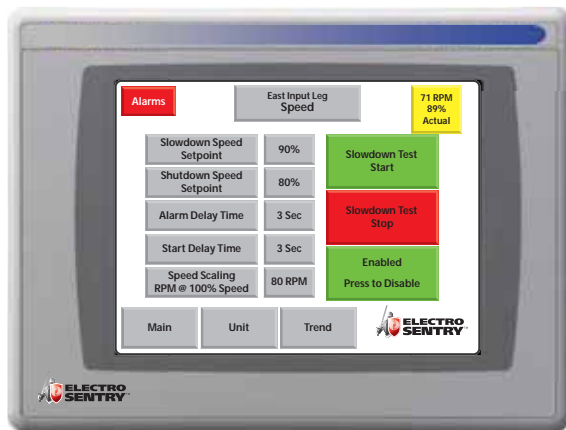
Alarm Condition — Shaft Speed Slow-
down on East Input Leg
Tail Pulley

Touch Flashing Sensor
Location Button
to View Sensor
Trend View



Trend View Shows Shaft Speed Slow-
down on East Input Leg
Tail Pulley

Touch SetUp
Button to View Set-
points



Setpoint Entry View Shows Shaft
Speed Setpoints

Touch Main
Button to Return
to "Home" Screen
View Then Touch
Reset All Alarms
After Speed Is
Above 90%



Normal Operation
"Home" Screen View — No Alarms



Specifications • TT420Z-LT Bearing Temp (1/2" Conduit) • TT420S-LT Belt Alignment (1/2" Conduit)

Specifications

Vin (min → max) 8 → 30 Vdc
 Operating Temp
 -40°C → +120°C (-40°F → +248°F) (measurement probe)
 -20°C → +80°C (-4°F → +176°F) (ambient)
 Accuracy ± 1°C (at 25°C) ± 3°C (at -40°C, 120°C)

Cable (24 AWG)

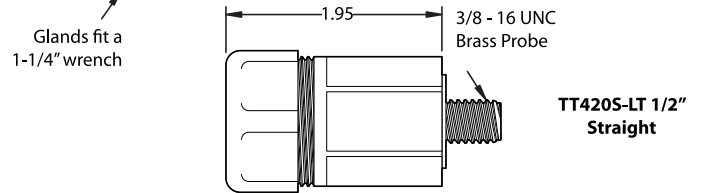
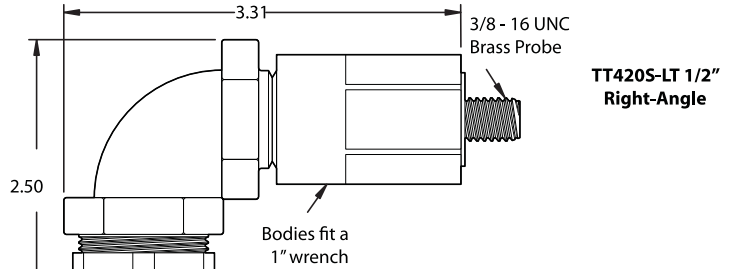
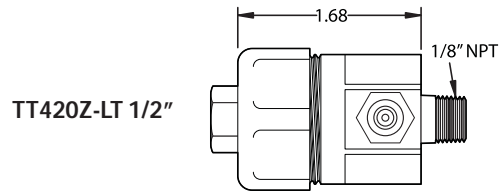
Color Code Brown (V+)
 Black (V-)
 Length 10 ft.

Certification/Ratings

Dust Ignition-proof for use in Class II and III, Div 1 and 2, Group E, F, G, when installed using Class II rated 1/2" flexible liquid-tight conduit.
 T5 Ta ≤ 80° C Enclosure Type 4.

Models

	Part No.
TT420Z-LT 4" Probe (1/2" Conduit 1/8" NPT)	800-001514
TT420Z-LT 6" Probe (1/2" Conduit 1/8" NPT)	800-001516
TT420Z-LT 8" Probe (1/2" Conduit 1/8" NPT)	800-001570
TT420Z-LT 12" Probe (1/2" Conduit 1/8" NPT)	800-001528
1/8" - 1/4" NPT Adapter	300-004100
1/8" - 1/2" NPT Adapter	300-004101
TT420S-LT 1/2" Conduit Right-Angle	800-001527
TT420S-LT 1/2" Conduit Straight	800-001524
Lug Mount Adapter (TT420S-LT)	776-001300



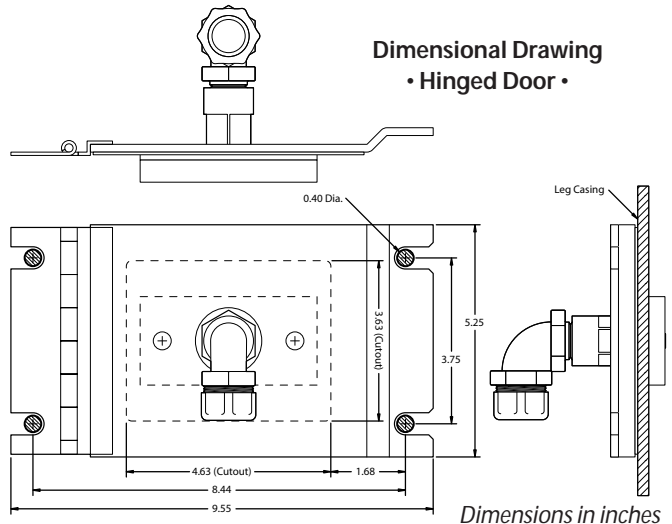
Brass Rub Block

Models

	Part No.
Hinged Door Only	776-000900
Brass Rub Block 2"x4"x1/2"	301-000101
Rub Block Spacer (0.18" thick)	776-001000
Uni-Strut Door Assembly	800-002900
Complete Door Assembly Incl. Rub-Block	800-002800



Hinged Rub Block Doors for Easy Installation and Maintenance



Specifications subject to change without notice.

ES-700 Rev G