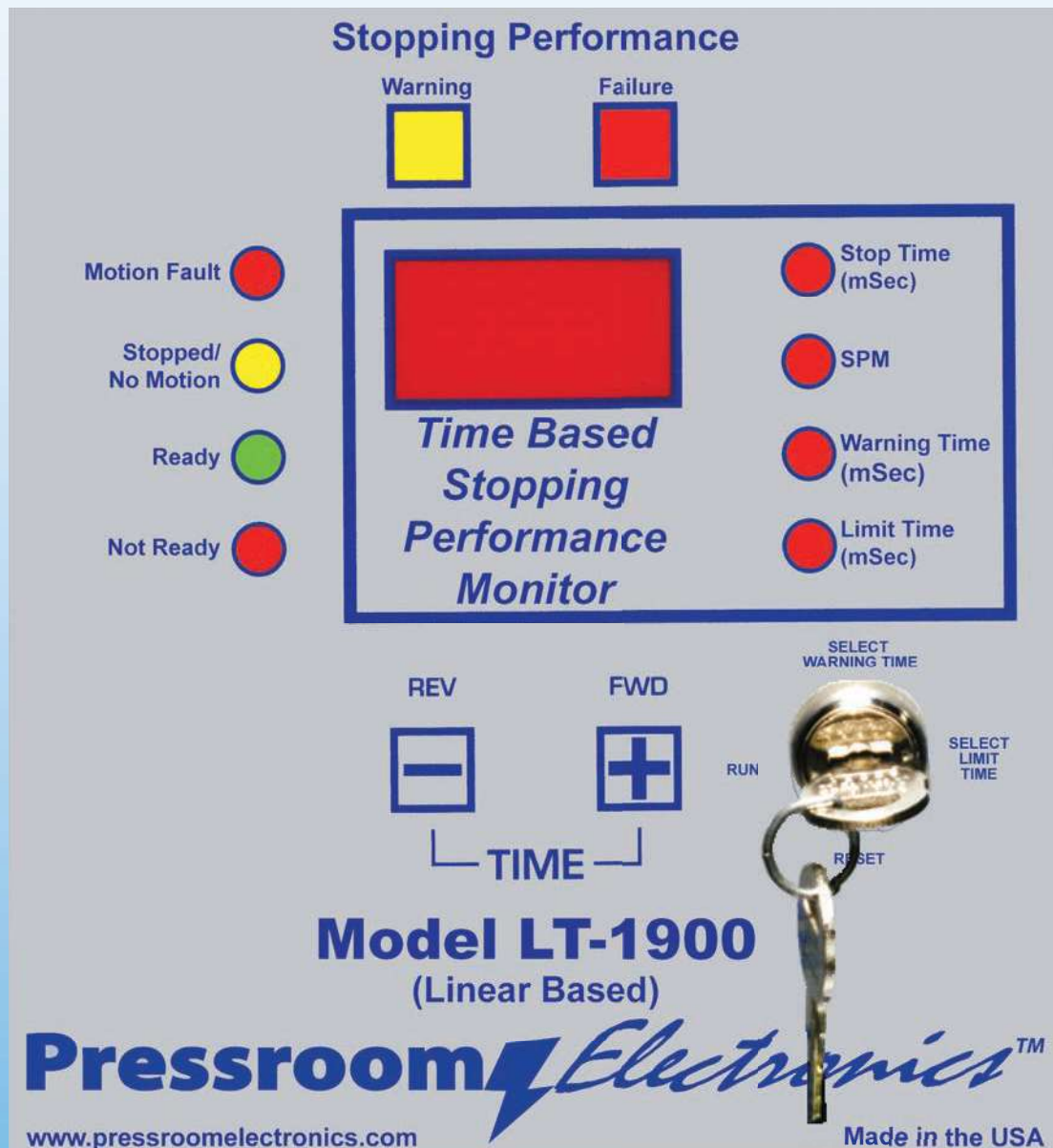


Time Based Linear Stopping Performance Monitor Model LT-1900



Time Based Stopping Performance Monitor

Model LT-1900 (Linear Based)

Warning Indicator

Yellow light illuminates when the setpoint is exceeded. Excellent input for the machine operator and for maintenance.

Motion Failure

Red LED illuminates when the pulses from the failure disappear.

Stopped/No Motion

Yellow LED illuminates when power to the valve drops out.

Ready

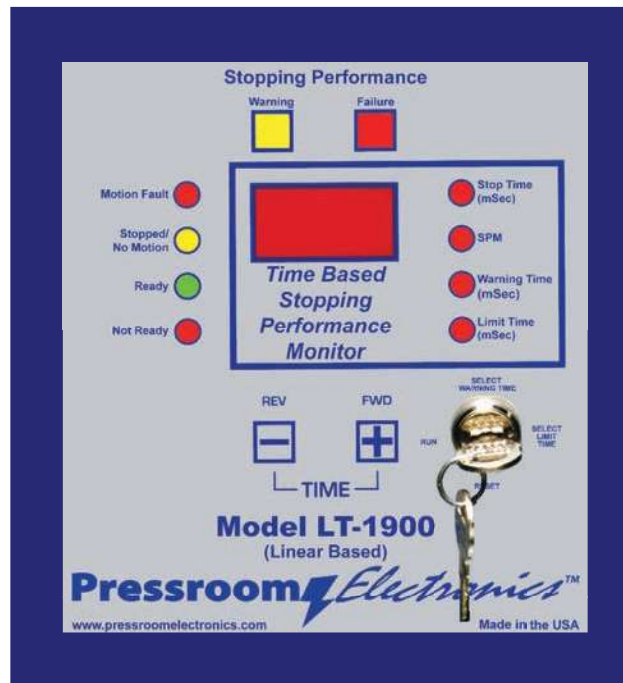
Green LED illuminates when all systems are go.

Not Ready

Red LED illuminates when the monitor safety relays have dropped out (i.e., drive failure, internal failure, etc.)

+/- Pushbuttons

The +/- pushbuttons are used to set the time values in milliseconds for the stopping performance warning and the limit setpoints.



Failure Indicator

Red LED illuminates when the actual stopping time exceeds the programmed stop limit setpoint.

Stop Time

Displayed in milliseconds after every stop in machine cycle and the red LED is illuminated.

SPM

Displayed during each machine cycle when the red LED is illuminated.

Stopping Performance

Warning Time

Displayed in milliseconds when the red LED is illuminated.

Stopping Performance Limit

Time

Setpoint is displayed in milliseconds when the red LED is illuminated.

System Programming Security and Safety

Keyed selector switch controls:

- Warning Time Setpoint
- Limit Time Setpoint
- System Reset
- System Run

How the LT-1900 Stopping Performance Monitor Works

The LT-1900 is a time based stopping performance monitor that utilizes a high resolution linear transducer and controller to measure the machine stopping time in milliseconds and also the SPM of the machine. The linear transducer is attached to the subject machine and is driven on a 1:1 linear ratio by the machine. The stopping time of the machine will be displayed on every stop and can be easily read on the bright red light emitting diode (LED) display on the front panel of the unit. The SPM of the machine will be displayed during the machine cycle. Individual LED indicators are visible and easily define the existing status of the unit during the machine cycle (shown above). All system programming and diagnostics are front panel mounted and controlled which will minimize downtime while enhancing operator safety and machine maintenance. All operating mode selections are supervisory controlled by a keyed

selector switch which meets all OSHA and ANSI standards for mode selection supervisory control. To program the Warning Time and the Limit Time setpoints, the user inserts the programming key into the lock and turns to the desired position (status LED illuminates). By depressing the +/- buttons to the desired time setting and turning the key back to the Run position, the new warning/failure time setpoints are saved. All errors and time value setpoints are permanently stored in the EEPROM memory which does not require a battery backup. The user cannot change or reprogram the Warning or Limit setpoints while the machine is in motion, which is an additional safety feature.

The dual force-guided captive contact safety output relays of the LT-1900 are always de-energized when the

programming key is not in the Run position. When the key is in the Run position, the safety output relays are always energized as long as there are no internal or external faults detected. When a fault is detected, it is recorded within the system in non-volatile memory along with the last stopping time. If the power to the LT-1900 Monitor System is removed and reapplied, the last error to occur will come back up and prevent any further use until the programming key is used. Only the key turned to the reset position can clear a fault. If no fault occurred but the programming key is moved into the reset position, the output relays will de-energize as a safety feature. Motion detection will still be monitored while in the Reset position even if the linear transducer has motion.

Time Based Stopping Performance Monitor

Model LT-1900 (Linear Based)

OSHA/ANSI Compliance

The LT-1900 system complies with OSHA code 29 CFR 1910.217 and ANSI Codes B11.3-2012 and B11.2-2013 for monitoring and control reliability standards. The unit will automatically prevent the activation of a successive stroke if the stopping time deteriorates beyond the brake limit setpoint.

Non-volatile EEPROM Memory

All diagnostic faults and setpoints are permanently saved in non-volatile memory which does not require battery backup. Information is retained indefinitely after a power loss or machine shutdown.

Advanced Design

The advanced circuitry and user friendly design on the LT-1900 allows both programming and status monitoring to be performed from the

front of the compact panel. There is no need to enter the control panel to adjust switches or thumbwheels which will enhance both safety and productivity.

System Self Diagnostics

Control displays status and system fault codes are on the LED display. A detailed definition, cause, and cure listing is supplied within each installation and operation manual.

Predictive Maintenance Diagnostic Tool

The unique "warning" feature on the LT-1900 allows for predictive maintenance to be scheduled on the machine, which will minimize downtime. Factors which will be monitored and affect stopping time: machine cycle speed, air supply, tooling weight, exhaust restrictions, wear adjustment and pressure.

Stop Time Measurement Built-In

The built-in stop feature initiates a stop signal in the downstroke. This is required information when calculating the location of point of operation guarding systems or operator palm button assemblies.

Complete Package Supplied

Everything you need to install and operate the LT-1900 is supplied.

- LT-1900 Controller
- Linear Transducer and Brackets
- Magnet
- 40' (12m) of transducer cable
- Dimensional and technical data
- Installation and operation manual

Standard Features

- Control reliable design
- Dual captive contact safety relays
- Bright red LED display
- Non-volatile EEPROM memory
- Flat unobtrusive design
- Drive failure detection
- Motion detector
- Automatic 90° and stop time tester press stop
- Programming security with keyed selector switch
- Very easy to program and to adjust limits
- System self-diagnostics with display codes
- External diagnostic display
- System status indicators (LED's)
- Solid state indicators - No incandescent bulbs to burn out
- Designed specifically for the rigorous metal stamping/metal forming industry
- Interfaces easily with all types of machine controls; solid state or relay logic
- Installs with ease on OEM, retrofit, or rebuild projects
- Front panel mount for installation into an existing control panel
- Made in USA

Specifications

Controller

Power Requirements - 120 +/- 10% VAC, 50-60 Hz
24 VDC +/- 10% (optional)

Power Consumption - 8 watts (Relays on)

Temperature Range - 0° to 50° Celsius

Relay Configuration - Dual self-checking force-guided captive contact safety relays

Relay Contact Rating

8 amps @ 250VAC resistive for safety relays

4 amps @ 250VAC resistive for alarm relay

System Accuracy - +/- 1 millisecond

Setpoints - Drive Failure (1 to 25 tenths of a second)

Warning (1 to 999 milliseconds)

Failure (1 to 999 milliseconds)

Enclosure - NEMA 12 (IP 64) Steel

Front Panel Mount - 8" (203mm) Height x 7" (178mm)

Width x 4" (102mm) Depth

Indicators:

Fault - Red LED

Motion Fault - Red LED

Ready - Green LED

Stop Time Display - Red LED

Warning Setpoint - Red LED

Warning - Yellow LED

Stopped/No Motion - Yellow LED

Not Ready - Red LED

SPM - Red LED

Limit Setpoint - Red LED

Enclosure rating: NEMA 12, IP 64

Dimensions - .34" (8mm) high, 1.1" (28mm) wide (all lengths)

Active Length - 4" (101mm) active zone - 10.3" (263mm) total length

Active Length - 8" (203mm) active zone - 14.7" (365mm) total length

Active Length - 12" (305mm) active zone - 18.4" (467mm) total length

Active Length - 16" (406mm) active zone - 22.3" (568mm) total length

Active Length - 24" (609mm) active zone - 30.4" (771mm) total length

Mounting Brackets - Supplied standard with each linear transducer

Cable Length - 40' (12m) supplied standard with each linear transducer

Time Based Stopping Performance Monitor Model LT-1900 (Linear Based)



The LT-1900 is a time-based stopping performance monitor that utilizes a high resolution linear transducer and controller to measure the machine stopping time in milliseconds and also the SPM of the press. The linear transducer is attached to the subject machine and is driven on a 1:1 linear ratio by the machine. The machine stopping time of the machine will be displayed on every stop and can be easily read on the bright red light emitting diode (LED) display on the front panel of the unit. The SPM of the machine will be displayed during the machine cycle.

LT-1900 Stopping Performance Monitor System includes:

- LT-1900 controller (LT)
- Linear transducer with mounting brackets and magnet
- 40' (12m) linear transducer cable
- Dimensions and technical data
- Installation and operation manual



LT-1900 in NEMA 12
(IP 64) steel enclosure.

ORDERING PROCEDURE FOR LT-1900

1. Specify Mounting Style
 - E Front Panel Mounting to be installed in an existing control panel.
 - C Stand alone NEMA12 (IP 64) steel enclosure.
2. Specify Controller input power
 - 1 24VDC
 - 2 120VAC 50-60Hz
3. Specify Hydraulic Valve Coil Voltage
 - 1 24VDC
 - 2 120VAC 50-60Hz
4. Specify linear transducer length (must equal or exceed maximum machine stroke length)
 - 04 4" (101mm) active length
 - 08 8" (203mm) active length
 - 12 12" (305mm) active length
 - 16 16" (406mm) active length
 - 24 24" (609mm) active length

*Over 24" (609mm) stroke required. Consult factory.

EXAMPLE PART NUMBER

LT	-	C	-	1	-	1	-	1	-	08
LT -1900		Mounting Style		Input Power		Signal Voltage		Hydraulic Valve Voltage		Transducer Length (in inches)

YOUR PART NUMBER

LT	-		-		-		-	