

LCM-9000: Process Monitor

The Tymac LCM-9000 is more than just a die cast machine monitor. It is a full featured, expandable building block that grows with your needs. Start with basic monitoring on a single machine, upgrade to tie bar strain monitoring, die temperature control, or effective real-time closed-loop shot control. Expansion to centralized, plant-wide process monitoring and control can be accommodated at any time.

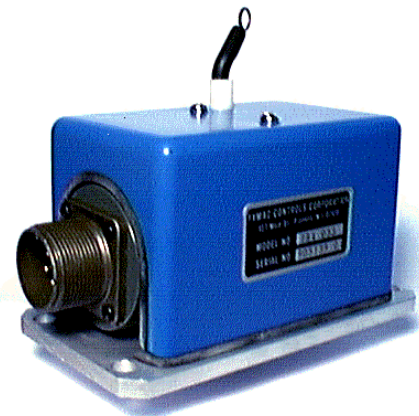


The basic LCM-9000 provides continuous process monitoring and performance reports on a single die cast machine. Quick comparisons between past performance and present operation allow for rapid process adjustments and optimum performance. The LCM-9000 immediately signals out-of-tolerance conditions that can lead to undetected scrap.

The custom design of the LCM-9000 gives it some unique features not found in other 'basic' process monitors. Out-of-the-box, the 'basic' LCM-9000 includes two (2) pressure channels (cables & transducers included), two (2) temperature channels (cables & thermocouples included), and one (1) position/velocity channel (cable & digital transducer included). All in all, the 'basic' LCM-9000 provides measurement and calculations on 28 process variables, and is expandable to meet your future needs.

The LCM-9000's application-specific design also gives it tremendous speed. Machines with as little as one (1) second cycles are no problem for the LCM-9000.

Finally, the LCM-9000 was designed to meet the unique needs of the die casting industry. The 'basic' system is easily expandable to include additional temperatures, pressures, tie bar strain monitoring, die temperature control and even full real-time closed-loop shot control. This means that the investment you make now won't be discarded as your process control requirements change.



LCM-9000 interfaces to 50G Rated Digital Encoder

The LCM-9000 is the first step towards total plant-wide process monitoring and control. Combine multiple LCM-9000s with the MTU-9000 Central Computer System to provide the information you need to maintain a competitive edge in today's economy.

Tymac Controls Corp

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US Patents: 3,911,419, 3,878,375, 4,094,490, 4,249,186 4,383,449, 4,504,920, 4,734,869 Canadian Patent: 1-234-902 European Patent: 0 126 174

LCM-9000: Process Monitor

Monitored Process Parameters

- Phase 1 Velocity (ips)
- Phase 2 Velocity (ips)
- Phase 1 Length (in)
- Phase 2 Length (in)
- Phase 1 Pressure 1 (psi)
- Phase 1 Pressure 2 (psi)
- Phase 2 Pressure 1 (psi)
- Phase 2 Pressure 2 (psi)
- Impact Pressure 1 (psi)
- Impact Pressure 2 (psi)
- Intensified Pressure 1 (psi)
- Intensified Pressure 2 (psi)
- Intensified Length (in)
- Metal Temperature (deg F)
- Oil Temperature (deg F)
- Stroke Length (in)
- Cavity Fill Time (ms)
- Intensifier Delay (ms)
- Cycle Time (ms)
- Gate Velocity (ips)
- Projected Force (tons)
- Injection Force (tons)
- Injection Position (in)
- Shot Date
- Shot Time
- Shot Number

Standard Features

- 1 - Position/Velocity Transducer Channel
- 1 - 800 Counts/inch Digital Cable Encoder
- 1 - Position / Velocity Interface Cable
- 2 - Pressure Channels
- 2 - Pressure Transducer Interface Cables
- 2 - Temperature Channels

User Interface

- 1 - 24-Position Keypad
- 1 - 4-by-40 LCD Display

LCM-9000 Software

- Menu-Driven User Interface
- Status Screen
- Setup Screen
- View Screen
- Select Screen
- Maintenance Screen
- Misc Screen
- Selectable US or Metric Measurement
- Continuous Shot Status Display
- Downtime Logging
- Scrap Logging
- Continuous Data Collection
- Down / Uploading of Machine Setups
- Alarm / Report Editor

Limit Switches

- 4 - Programmable Limit Switches
- 1 - Programmable Alarm Level Output
- 1 - Programmable Report Level Output

Communication Links

- 1 - High-Speed MTU-9000 Network Link
- 1 - High-Speed RTU-9000 Terminal Link

Options / Expansion

- MTU-9000 Central Computer System
- RTU-9000 Operator Terminal
- Interface to Hall Effect and Linear Transducers
- Additional Pressures (Up to 8 total)
- Metal Pressure Measurement
- Additional Temperatures (Up to 14 total)
- Additional Limit Switches (Up to 8 total)
- 4-Channel Tie Bar Strain Monitoring
- Die Temperature Control (Up to 12 Channels)
- Real-Time Closed-Loop Shot Control - SuperShot

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