



IDC GTSM4 HIGHLIGHTS

GRAPHIC TOUCH-SCREEN 4-CHANNEL

PRESS TONNAGE MONITOR

WHO NEEDS A “TONNAGE MONITOR”?

- Stamping press Owners
 - Protect your investment
 - Optimize your production
 - Quick setup
 - Detect in-process changes
 - Prevent quality spills
 - Enhance facility safety score
- Stamping press Operators
 - Tonnage control makes good parts despite wild variables
 - machine temperature
 - material changes
 - slug buildup
 - Catch run-time changes that can affect part quality

HOW DOES IT WORK?

- Strain (material deflection) is proportional to Stress (force from process)
 - Hooke's Law - basic physics
- Strain cells measure deflection of load-bearing press members
- Initial Calibration relates measured Strain to known Force
 - In-process Strain measurements are then scaled to Force
- Press Position encoder adds another dimension
 - Graphical analysis of force created by the production process throughout cycle
 - Visualize & monitor pre-bottom tool forces
 - Cushion operations
 - Cam operations
 - Stretch forming/Drawing
 - Protect press against excessive forces off-bottom
 - Press structural capacity is significantly less away from "bottom dead center"

IDC USER CENTRIC FEATURES

- Peak Ton readouts
 - Large, bright numeric display
 - 4 individual channels + Total
 - Color matched with graphic display
 - Plan view channel layout aligns with machine sensors
- ON-SITE Graphic tonnage displays
 - Tons vs Position with Encoder/Resolver option
 - Channel and Total peak values on same screen
 - Color-matched Channel Peaks & Graphics
 - Easily follow force readings to physical machine location

USER CENTRIC FEATURES (continued)

- Recipe Management
 - 9999 Recipes stored in onboard Flash
 - no battery backup required
 - On-screen Recipe selection
 - Easily view tonnage Targets
 - SaveAs allows easy propagation
 - Ability to create/update Recipe from current operation
 - Simple application of Tolerance on current operation
 - Ability to individually view and/or set limits on each channel
 - Perfect for asymmetrical operations
 - Recipe selection over Ethernet from external production control system

SPECIFICATIONS

- High Analog Resolution: 15 bits
- Scaling Range: 150% of press capacity
- Position Encoder Interfaces
 - Rotary Digital (for rotary presses)
 - Binary or Gray code: 8-12 bits (1.4 - .087 Degrees)
 - Easily accommodate existing encoders
 - 5V & 24 V options
 - Resolver
 - Transformer isolated
 - Up to 12-bit resolution
 - Linear (for hydraulic or screw presses)
 - Magnetostrictive pulse interface
- Power Supply options
 - Universal 100-240VAC, 50/60 Hz
 - 24V DC
 - 30 Watts power requirement
- Strain sensors
 - 5V excitation, 175 - 1000 Ohm strain gages
 - Compatible with most industry-standard strain sensors
- Display: 800x400 pixel Capacitive Touch LCD

CREATIVE APPLICATIONS

- Assembly operation monitoring
 - Press-fit: Bushing/Bearing insertion
 - Punching, Piercing: broken/dull punch detection, multi-layer assembled part monitoring
 - Staking
 - Riveting: verify rivet presence, size, process force
 - Cold/Hot Header presses
 - Batch weight monitor
- Production Test
 - Actuator test: seat mechanism
 - Motion Torque test: mirror mount adjustment joint
- Custom sensors
 - Sensors to fit/replace existing special machine components
- Binder analysis & validation kits
 - Measure, quantify & qualify binder force & separation in stretch form die development
 - Facilitate deployment to production presses

ABOUT IDC CORPORATION

- Established 1970
- Industrial Instrumentation & Automation
- Pioneered Load vs Position monitors in 70's
 - Instrumental in early development stages of innovative Stretch Form processes now widely used in large sheet metal stamping
- Extensive industry experience & collaborations
 - Global Auto manufacturers & Suppliers
 - Aircraft manufacturers & suppliers
 - Press manufacturers
 - Global Die manufacturers
- Located in Dimondale, Michigan, USA
 - Represented in Mexico by CESEHSA S.A.
- Product lines
 - Instrumentation
 - Custom control system engineering & Production
 - Manufacturing Production & Test
 - Municipal infrastructures
 - UL Certified Control Panels
 - AGV Systems & components