



# TS7000 LOAD MOMENT INDICATOR PIPELAYER Technical Data Sheet

The TS7000 Safe Load Indicator complies fully with the requirements of the OSHACT (Act 85 of 1993). The system also meets and exceeds the standards as set out in the South African standards SANS 19:2007 Edition 1.1, SANS 61-1:2009 Edition 2, ISO 10245-1:2008 Edition 2 and the British Standard BS7262:1990.

## SYSTEM FEATURES

- Designed for easy operator use
- System test with self-diagnostic capabilities
- Touch screen operation
- Large colour display with excellent sunlight readability
- All faults displayed as text messages – no codes
- Complete load chart memory
- On board basic calibration with simple calibration techniques
- Vibration proof and tested at extreme temperatures including high humidity (-20 to 70°C)
- Rated Load Display – Max load allowed for selected configuration and sensed parameters
- Lifted Load Display – Load on hook (including hook and all ancillary lifting equipment)
- Radius Display – Distance from centre line of rotation to load centre
- Percentage of Rated Load Display - % Utilisation
- Boom Length Display
- Boom Angle Display
- Tilt Angle Display – Visual X & Y Axis
- Counterweight Position Display
- Anti-2-Block incorporated into the system
- 90% Audio and Visual pre-warning
- 100% Audio and Visual overload warning
- Relay output for lever cut-off (output to hydraulic dump circuit)
- On screen override for momentarily overriding lever cut-off - Optional
- Key switch for overriding lever cut-off
- Data Logger
- Wind Speed Display with selectable units of measure – Optional
- Maximum Wind Speed allowed with audio and visual alarm – Optional

## SYSTEM COMPONENTS

QUANTITY	ITEM DESCRIPTION
1	TS7000 Display Unit Including Swivel Mounting Bracket
1	M400 Motherboard in IP67 Junction Box Suitable for Exterior Mounting
2	A400 Boards in IP67 Junction Boxes Suitable for Exterior Mounting
1	Link or Pin Loadcell for Boom Tip
1	Anti-2-Block Switch Including Counterweight Assembly
1	Proximity Switch for Counterweight Position Detection
1	Complete Operator's Manual
All Cables to Complete Installation of Complete TS7000 Safe Load Indicator	

## OPTIONAL COMPONENTS

QUANTITY	ITEM DESCRIPTION	SYSTEM USE
1	Wired Anemometer – Wind Speed Meter	Optional Extra Required by Some Construction and Mining Regulations
1	Flashing Led Robot Light (Red, Amber & Green) Supply 11–35 VDC	Optional Extra Required by Some Construction and Mining Regulations

## TECHNICAL SPECIFICATIONS

### TS7000 Display Unit:

- Single Multi-Layered Circuit Board – 4 layers
- 7" TFT Colour Capacitive Touch LCD
- Graphical Colour Screen – 256,000 Colours
- Display Resolution – 800 x 480 Pixels
- 91 x 152mm Viewing Area
- Aluminium Bezel Fitted to Powder Coated Sheet Metal Enclosure
- Replaceable Transparent Touch Screen Protection Sticker
- USB A Port for Software Upgrade or Data Logging
- CAN Bus or MOD Bus Communication
- Real Time Clock for Data and Error Logging Timestamps
- 1 x Optically Isolated Digital Input
- 1 x High Side Driver
- 85dB Buzzer
- External USB Connector for Data Logging (Optional)
- IP55 Protection (BS7262 5.7)
- Outside Dimensions 145 x 203 x 55mm (L x W x H) Single Multi-layered circuit board – 4 layers

### M400 Mother Board

- Single Multi-layered circuit board – 2 layers
- Phoenix Contact Spring Terminals
- 10 – 36VDC Input Voltage
- Fuse Protected Input Voltage – 2Amp
- 4 x Optically Isolated Digital Inputs (Optional) (PNP or NPN User Selectable)
- 1 x Load Cell Input (mV Input)
- 4 x Inputs Built in any Combination of 4-20mA or 0 – 5VDC Analogue Input
- 1 x 10Amp Relay Output (Potential Free Contact) with Fault Reporting (Dump/Auto/Cut Off) - 10Amp Fuse
- 3 x 10Amp Relay Outputs (Potential free contacts) – 3 x 5Amp Fuses
- Monitored & Fuse Protected Key Switch Input for Dump/Auto - Cut Off Relay
- USB A Port for Software Upgrade
- CAN Bus and/or 2.4Ghz Wireless (Optional) Communication
- IP66 Glass Fibre Reinforced Polyester Enclosure
- Outside Dimensions 220 x 120 x 100mm (L x W x H)

### Tip Mounted Amplifier Board or Chassis Mounted Tilt Board

- IP66 Glass Fibre reinforced polyester enclosure
- Angle Measurement Using a High Sensitivity Multi Axis Accelerometer (Accuracy  $\pm 0.1^\circ$ )
- 2 x Load Cell Input (mV input)
- 2 x 0 - 5 VDC Inputs (Standard) or 2 x 4-20mA Inputs (Optional)
- 3 Analog Inputs Maximum can be Configured and used Simultaneously
- 1x 4K7 Sensing Input for Anti-2-Block Input (Can be Built as Optional Optically Isolated Digital Input)
- 3 x Optically Isolated Digital Inputs (PNP or NPN User Selectable)
- CAN Bus and/or Wireless (Optional) Communication
- Outside Dimensions 160 x 75 x 60mm (L x W x H) excluding gland entry

### Load Cell

- Bridge resistance 350 $\Omega$  + 4 $\Omega$
- Rated Output  $\pm 1\text{mV/V}$
- Maximum excitation 15 VDC
- Measuring range – As per pipe layer manufacturers specifications
- IP67 Military Specification connector

### Wired Anemometer (Wind speed meter)

- Measuring range 0.5-50 meters per second (3 – 180 kilometres per hour)
- Black Technical Plastic Body with Uniquely Designed Rotor, Robust and Flexible
- High-Quality Stainless-Steel Bearings
- Self-Levelling Mounting Bracket
- IP65 Environmental Protection
- Outside Dimensions 305 x 105 x 105mm (L x W x H)
- Accuracy: 1km/h (3 - 15km/h) 3% (15 - 180km/h)

### Cabling & Wiring

- All Communication Cables 0.5mm<sup>2</sup> screened
- Exposed Cables Protected by Convuluted Flexible Conduit

