



TS7000 LOAD MOMENT INDICATOR

WIRELESS 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

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
2	CS300 Wireless Modules
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	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
- CNC Machined 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
- 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) excluding mounting bracket

M400 Mother Board

- Single Multi-layered circuit board – 2 layers
- 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)

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

CS300 Wireless Modules

- 2.4 GHZ Measuring Range
- Power 2.5mW
- Channels 16
- 400m Range with Integrated Antenna
- 1.5V – 3.6V Power Supply
- IP65 Environmental Protection
- Low Voltage Directive – 2014/35/EU
- EMC Directive 2004/108/EC
- Optional - Angle Measurement Using a High Sensitivity Multi Axis Accelerometer (Accuracy $\pm 0.1^\circ$)
- 1x 4K7 Sensing Input for Anti-2-Block Input (Can be Built as Optional Optically Isolated Digital Input)

Cabling & Wiring

- All Communication Cables 0.5mm² screened
- Exposed Cables Protected by Convuluted Flexible Conduit