

LT1270

DIN Rail Mount Load Cell Indicator

Datasheet – English 1.00



14 Segment
LED Displays



0-10V
0-20mA
4-20mA Analog
Re-Transmission



4 or 6 Wire
Load Cells



5VDC
Excitation



High Resolution
ADC



High Resolution
DAC



RTU
ASCII Modbus™
Communications



Auto Zero
Function



Field upgradeable
Firmware



Scale Motion
Indication



Advanced
Digital Filtering



RS232
&
RS485



Tare
Function



2 Alarm
Setpoints



Gross/Net
Function

Introduction

The LT1270 DIN rail mount load cell indicator is a precision digital indicator for load cell and strain gauge applications.

The high bright 6-digit 14 segment LED displays make for easy setup and readability. A simple menu system with built in help hints allows for easy configuration of display and load cell settings. The load cell calibration is easily accomplished using known weights.

A universal mains switch mode power supply (85-264VAC) is provided as standard but an optional low voltage (10-30VDC) isolated power supply or a high voltage (25-70VDC) isolated power supply can be installed.

The LT1270 contains precision front end circuitry for high accuracy and stability. The ratiometric ADC circuitry automatically compensates for temperature drift and excitation voltage variances due to cable loss. The load cell excitation voltage is 5VDC and can interface with both 4 wire and 6 wire load cells. The LT1270 can power up to 6x350Ω load cells.

RS232 and RS485 communications is supplied as standard with the MODBUS™ RTU and MODBUS™ ASCII protocols. A simple ASCII out protocol is also provided for serial printing and communicating to large displays. The LT1270 also contains 2 programmable mechanical relays and analog retransmission for generating a precise 0/4-20mA or 0-10V analog output signal.

The LT1270/1 also includes advanced features such as auto-zero tracking, user input linearisation, max/min recording, programmable front push buttons, 2x programmable digital inputs, security menu lockout, motion indication, advanced digital filtering, automatic offset calibration plus many more to provide a all in one precision load cell indicator.

1 Features

- High bright 6-digit 14 segment LED displays for easy setup and calibration
- 4 or 6 wire load cell / strain gauge input
- Can power up to 6x350Ω load cells at +5VDC excitation voltage
- High precision 24 bit ratiometric ADC front end circuitry
- -199999 to +999999 display counts
- DIN Rail mount ABS enclosure
- Easy calibration using known weights
- 16 Bit Analog output (0/4-20mA or 0-10V)
- 2x Mechanical setpoints
- RS232 communications (MODBUS™ RTU/ASCII and an Infiniteq ASCII out protocol)
- RS485 communications (MODBUS™ RTU/ASCII and an Infiniteq ASCII out protocol)
- 2x Programmable digital inputs (pull up or pull down field jumper selectable)
- 3x Programmable front panel push buttons
- Universal mains switch mode power supply (85-264VAC) standard with built in EMI and fuse protection
- 16 Point lineariser
- Auto-zero tracking function
- Automatic offset calibration
- Tare function
- Gross/Net function
- Selectable/adjustable advanced digital filtering
- 2 Alarm, Motion indication and Net front panel LED status
- Max/Min recording
- Security menu lockout
- Built in menu help hints
- Field upgradable firmware via the RS232 interface
- 1 Year Warranty

Optional hardware includes:

- Low voltage 10-30VDC Isolated power supply
- High voltage 25-70VDC Isolated power supply

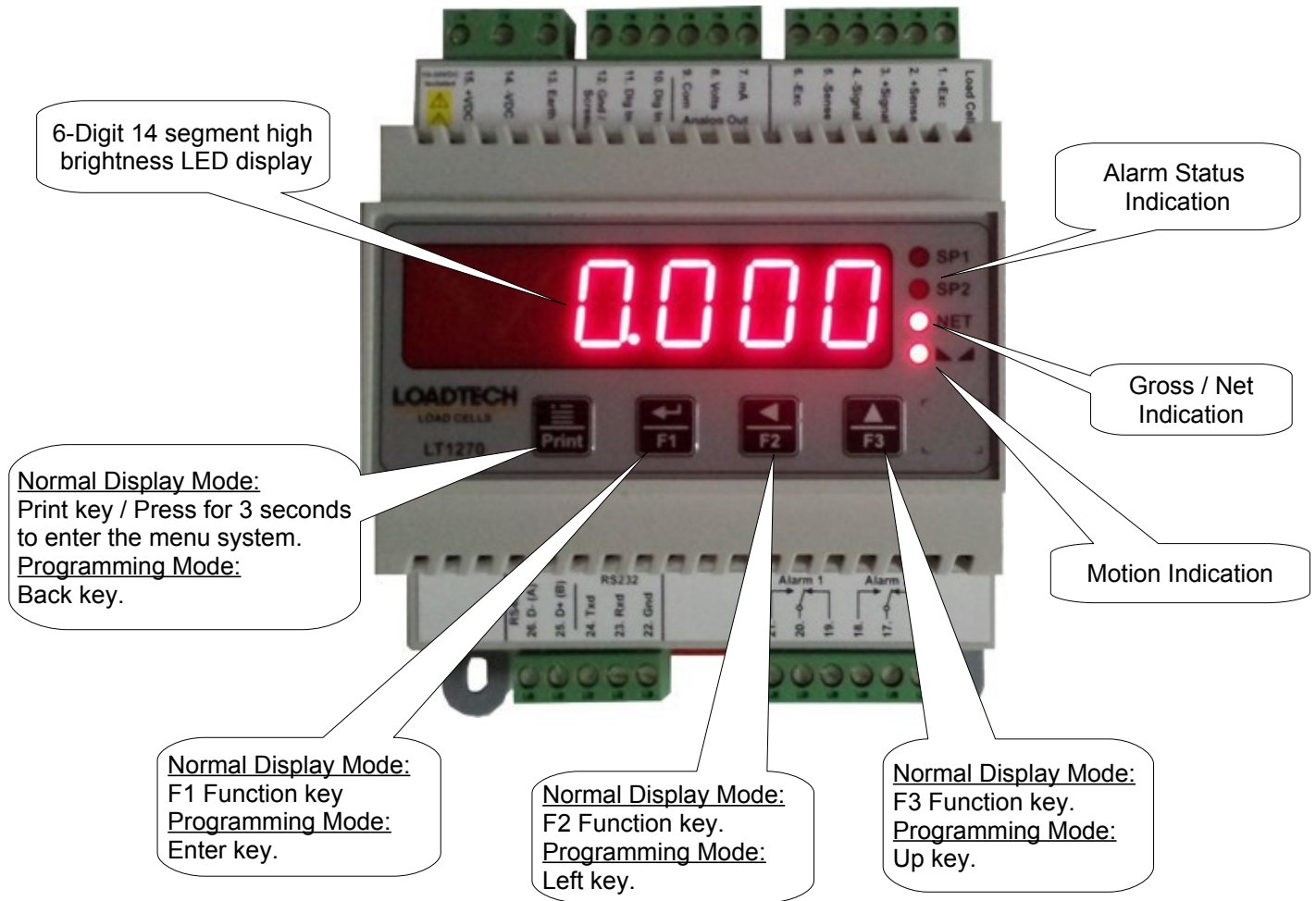
2 Specifications

General:	
Display	6-Digit, 13.8mm (0.543") 14 segment high brightness red LED
Display range	-199999 to +999999
Display decimal point	0 to 0.00000
Status LEDs	4 red LEDs total (SP1, SP2, Net & Motion)
Digital Inputs	2 Programmable digital inputs Built in hysteresis, filter and input over voltage protection Maximum input voltage <30VDC Input logic is field jumper selectable (Pull up, sinking inputs) - 10kΩ internal resistor to 5V (Pull down, sourcing inputs) – 10kΩ internal resistor to common Active/Non-Active input trigger: <1.9V Non-Active/Active input trigger: >2.3V
Keypad	4 keys total, 3 programmable keys
Memory storage	Non-volatile EEPROM, 100000 write cycles minimum
Warm up time	15 minutes
Power Requirements:	
AC Power Supply	85-264VAC, 50/60Hz or 120-370VDC Isolation: 3000VAC/1min
DC Power Supply, 10-30VDC (Optional)	10-30VDC input Reverse and over voltage protected Isolation: >1000V/1min
DC Power Supply, 20-70VDC (Optional)	25-70VDC input Reverse and over voltage protected Isolation: >1000V/1min
Power Consumption	<8W
Fuse (Built in)	2A Slow Blow (Wickmann 3721200000) RS components part number 226-6599
Environmental:	
Operating temperature	-10°C to 50°C (14°F to 122°F)
Storage temperature	-40°C to 80°C (-40°F to 176°F)
Operating and storage humidity	<85% RH non-condensing
Enclosure:	
Overall Dimensions	102x132x57mm (LxHxD) (4.02x5.2x2.24")
Mounting	Din Rail Mount (See mounting drawing)
Enclosure Material	ABS plastic
Front Facia Rating	IP20
Wiring connections	Removable terminal blocks
Input:	
ADC Resolution	24 bit Delta-sigma, Ratiometric
Input range	+/-19mV
Conversion rate	10 updates/second
Filter	Moving average digital filter with programmable input step detection
Increment size	1, 2, 5, 10, 20, 50, 100, 200
Input Impedance	>100 MΩ
CMRR	>-110dB
Linearity	<0.01% of full scale
Accuracy	0.05% of full scale
Calibration method	Using known weights
Load cell connection	4 or 6 wire connection + shield (Sense included)

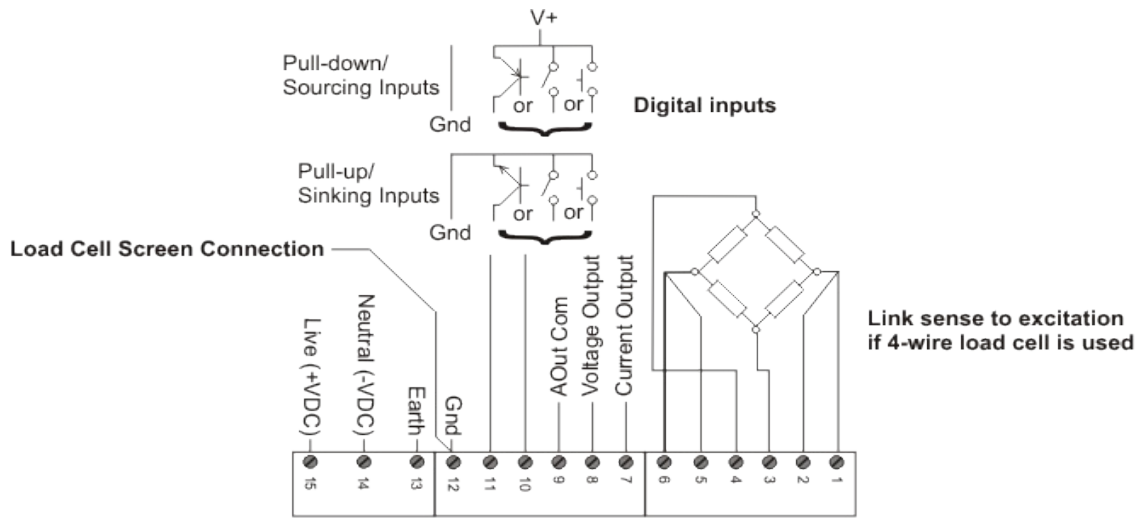
Load Cell Excitation:	
Excitation Voltage (Sense included)	+5VDC fixed
Excitation current	Max. 90mA Up to 6x350Ω load cells or 10x1000Ω load cells
Cable compensation	Ratiometric
Analog Out:	
Ranges (Selectable through menu)	0-20mA 4-20mA 0-10V
DAC Resolution	16 Bit
Update rate	10 updates/second
Current output compliance (maximum load)	500Ω (Current is source, not sink)
Voltage output compliance (minimum load)	1kΩ
Current open loop detection	Display flashes "mA.Loop" error message
Linearity	<0.02% of full scale
Accuracy	0.05% of full scale
Communications:	
Protocol	MODBUS RTU MODBUS ASCII ASCII In (Infiniteq Protocol) ASCII Out (Infiniteq Protocol)
RS232 Communications	Baud rate: 1200,2400,4800,9600,19200,38400,57600,115200 Data bits: 7 or 8 bits Parity: Odd, Even or None Stop bits: 1 or 2 stop bits Non isolated
RS485 Communications	Baud rate: 1200,2400,4800,9600,19200,38400,57600,115200 Data bits: 7 or 8 bits Parity: Odd, Even or None Stop bits: 1 or 2 stop bits Internal 120Ω field jumper selectable termination resistor Max 32 instruments per line
Setpoints (2xElectro-mechanical Relays)	
Contact rating	2A@240VAC or 30VDC (Resistive load)
Isolation to input circuitry	>1000Vrms for 1 minute
Type	FORM-C (Change over contact (NO/NC))
Life expectancy	>100K cycles min. at full load rating. External RC snubber extends relay life for operation with inductive loads

3 Front panel layout, Wiring and Dimensions

Front panel layout



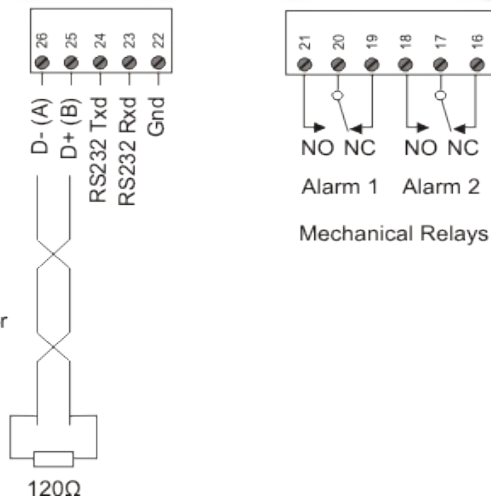
Wiring



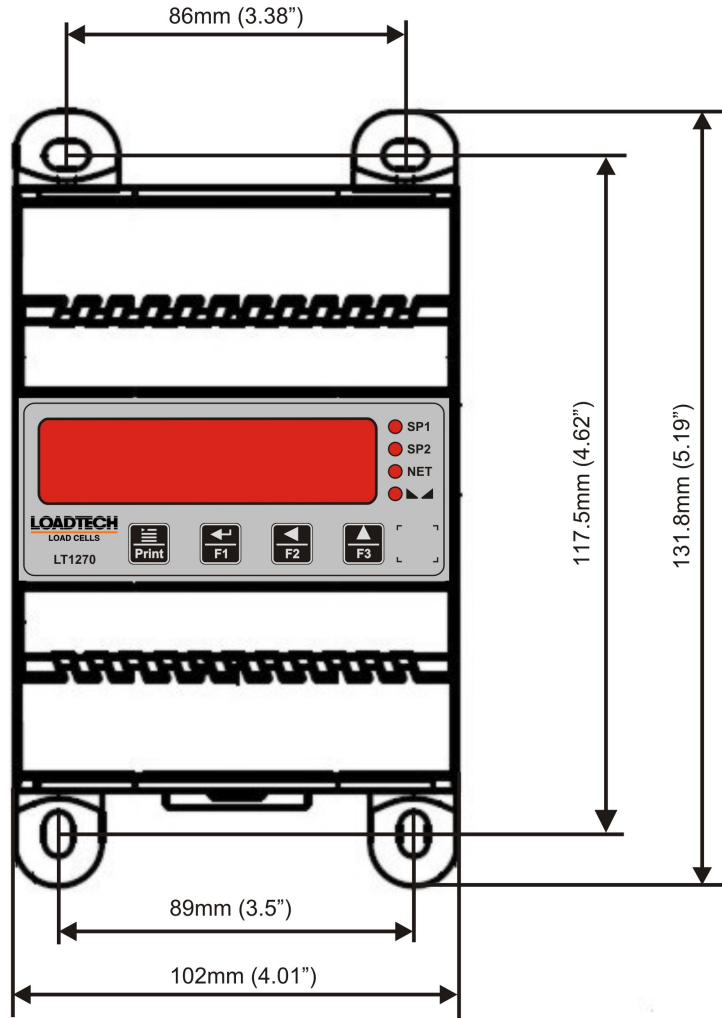
Note: Ensure that all cabling has adequate strain relief.

RS485 120Ω Termination resistor is jumper selectable

It is recommended that a 120Ω resistor is connected across the wires at the furthest point from the master device



Dimensions



4 Ordering Information

Add option codes to suffix of model number separated by hyphens.

Example:
 (LT1270 DIN Rail weighing indicator with 10-30Vdc power supply)

LT1270-700

Option part numbers:

- 700 - Low voltage 10-30VDC isolated power supply
- 701 - High voltage 25-70VDC isolated power supply
- 760 - Display engineering units
- 762 - 115VAC Inductive load suppressor
- 763 - 230VAC Inductive load suppressor
- 764 - 2A Slow blow replacement fuse
- 765 - R-C Snubber noise and arc suppressor
- 766 - Transparent protective front cover

5 Website

An electronic copy of this datasheet can be downloaded from www.loadtech.co.za.

6 Notice

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7 Warranty

This product carries a warranty for a period of one year from date of purchase against faulty workmanship or defective materials, provided there is no evidence that the unit has been mishandled or misused. Warranty is limited to the replacement of faulty components and includes the cost of labor. Shipping costs are for the account of the purchaser.

Note: Product warranty excludes damages caused by unprotected, unsuitable or incorrectly wired electrical supplies and or sensors, and damage caused by inductive loads.

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