

# Load Cell Central

1-800-LOADCEL

## APPLICATIONS

- Gross, tare and net weighing
- Vehicle and railroad weighing
- Multi-container or axle weighing
- Weigh system interface to Distributed Control System
- Batching and process control systems
- Drum filling, tank, hopper, bench and floor scales
- Over/Under check-weighing and material-testing
- Chemical and washdown environments
- Hazardous environments with optional IS barriers

## FEATURES

- NEMA 4/4x stainless steel enclosure
- One-inch-high bright, bold, 6-digit LED display
- 10 selectable modes of operation: normal, keyboard tare, print weight, subtotal and total, multi-container/axle weighing with total, auto weigh and print, auto axle weigh with traffic light control, peak hold, over/under checkweigh, and bulkweigh
- Programmable in Scale Basic™ macro language for application development (event driven)
- Simulates A&D, Condec, Weigh-Tronix, Ohaus communication protocols; user configurable protocol
- Selectable 5-point calibration for improved accuracy
- 20-bit A/D with 60 samples/second conversion rate
- Signal sensitivity to 0.1 uV/graduation
- Selectable digital filter to eliminate weight vibrations
- Powers up to 12 x 350 Ω or 24 x 700 Ω load cells
- Two serial ports: RS232, 20mA current loop and RS485
- Digital port for relay control and remote operation
- Primary and secondary units with conversion factor
- 32K RAM provides 500 ID storage for part, truck, etc.
- Selectable address for multi-drop RS485 network interface

## OPTIONS

- Time and Date Clock Y2K and Leap Year compliant
- 4-20mA/0-10VDC isolated analog output with 16-bit resolution
- 4-channel relay box for setpoint control or remote operation
- Input/output solid-state relay modules (AC/DC)
- High-speed 100 samples/second conversion rate
- EZ-LINK™ PC software; facilitates configuration and Scale Basic programming; Windows® 3.1/95/98/2000 compatible
- Intrinsic safety barriers for hazardous locations Class I / II / III Div. 1 and 2 Groups A-G
- Panel mount kit (for future release)
- DeviceNet PLC communications interface (for future release)
- Profibus PLC communications interface (for future release)

## MODEL: 410

### WEIGHT INDICATOR



DeviceNet  
COMMUNICATIONS



MADE IN U.S.A.

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# MODEL: 410

# SPECIFICATIONS

## STANDARD FEATURES

### SCALE SPECIFICATIONS

Display	Bright red LED; 1-inch x 6-digit numeric
Status Indicators	Gross, Net, Motion, Zero, LB, kg (LED)
Keyboard	5-key sealed tactile feel membrane
Internal Resolution	20-bit A/D Sigma-Delta; 1,048,000 d
Display Resolution	200,000 dd industrial; 10,000 dd HB44
Display Increments	Selectable 1, 2, 5, 10, 20, 50 100
Decimal Point	Selectable 0, 1, 2, 3, 4 decimal places
Conversation Rate	60 samples/second typical
Signal Sensitivity	0.1 uV/graduation (min)
Signal Range	0.5 mV/V to 6mV/V
Load Cell Excitation	10 ± 0.5VDC (-5 to +5)
Load Cell Power	12 x 350 Ω or 24 x 700 Ω load cells
Auto Zero Tracking	0-60 dd in 1/4 dd increments
Auto Zero Delay	0-25 seconds In 0.1 second increments
Motion Detect	0-60 dd in 1/4 dd increments
Motion Delay	0-25 seconds In 0.1 second increments
Digital Filter	0-18 selectable filter (DSP) levels
Calibration	Selectable multi-point (up to 5) digital calibration to linearize input signal
Watchdog Timer	Enable/disable fault tolerant operation
RFI Protection	Signal, excitation and sense lines
RAM	32K provides 500 ID storage (parts, etc)

### COMMUNICATIONS

Serial Port 1	Simplex RS232 or 20mA current loop
Serial Port 2	Full duplex RS232, 20ma or RS485
Digital Port	3 inputs and 3 outputs; Low active (TTL)
Print Formats	4 user configurable print formats

### GENERAL SPECIFICATIONS

Power	110/220VAC ±10% @ 50/60Hz or 12-28 VDC
Power Consumption	10W @ 115VAC; 6W @ 12VDC
Operating Temperature	-10 to +40 °C.
Weight	6 lbs (2.72 kg)
Warranty	One-year limited

## OPTIONS

Analog Output Module	Fully isolated 0-10VDC or 4-20mA; 16-bit resolution; 650Ω load resistance
Relay Box	4-channel external relay box
Relay Modules	Input/output solid-state (AC/DC) relays
Clock Module	Time and Date Clock Y2K and Leap Year compliant
High speed (HS)	100 samples/second conversion rate; high-speed process control applications
EZ-LINK™	PC software; facilitates configuration and Scale Basic programming
IS Barriers	Hazard location intrinsic safety barriers
Panel Mount Kit	Mounts enclosure to user panel (for future release)
DeviceNet	PLC/COM interface (for future release)
Profibus	PLC/COM interface (for future release)

NTEP COC# 96-133-A1  
UL & CUL pending

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## MODES OF OPERATION

The 410 is the only digital weight meter in its class that is fully programmable in an easy and flexible macro language called Scale Basic™. In addition to the built-in modes of operation, Scale Basic allows you to customize the operation of the 410 to meet your application requirements. The Scale Basic language provides various commands and functions that include: math operations, I/O control, setpoints, timers, data entry, ID storage, message display, and program sequence control among others. Programming the 410 can be performed through the keyboard or a PC using the optional software that greatly facilitates setup and programming.

### MODE 0 - Normal

Basic gross, tare and net weighing

### MODE 1 - Keyboard Tare

Same as Mode 0 but tare weight is keyboard entered

### MODE 2 - Print Weight and Total

Print multiple gross or net weights and keep a running total for job, lot, etc. Print accumulated gross, tare and net totals at the end

### MODE 3 - Print Weight With Subtotal and Total

Same as Mode 2 but subtotals can be printed.

### MODE 4 - Multi-Container/Axle Weighing

Push the PRINT button to sequentially number and print a series of weighments. Push the TOTAL button to print and clear the total

### MODE 5 - Auto Weigh and Print (Auto Axle Weigh)

Same as Mode 4 but printing is automatic when weights are placed on the scale. Provides traffic light control and trip level configuration

### MODE 6 - Auto Axle Weigh (Long Scales)

Same as Mode 5 but previous axles are auto tared

### MODE 7 - Peak Hold Mode

Display or print the gross or net peak weight detected

### MODE 8 - Over/Under Checkweigh

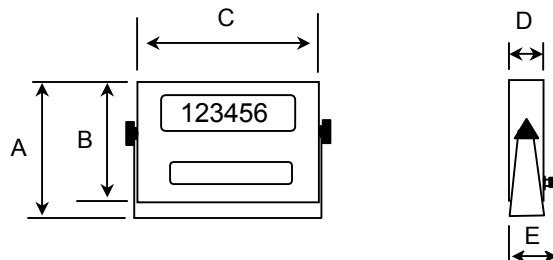
Provides 3 TTL outputs and 2 setpoints to indicate over, under and between weight conditions. Outputs can activate lights or alarms

### MODE 9 - Bulkweigh

Provides setpoint entry and relay output to control fill process. Remote start/stop operation with configurable scale empty and draft weights. Use for multiple drafts with subtotal and total printing

## DIMENSIONS

A = 7.63"	(19.38 cm)
B = 6.88"	(17.48 cm)
C = 8.56"	(21.74 cm)
D = 2.00"	(5.08 cm)
E = 3.00"	(7.62 cm)



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