Weight Indicator
MODEL MSS

TABLE OF CONTENTS   PAGE

Industrial Weighing Systems

9 Richmond St. Picton, ON Canada K0K 2T0
Ph: 613-786-0016   Cell: 613-921-0397   Fax: 613-476-5293
E-mail info@iwsystems.ca   **Website:** www.iwsystems.ca
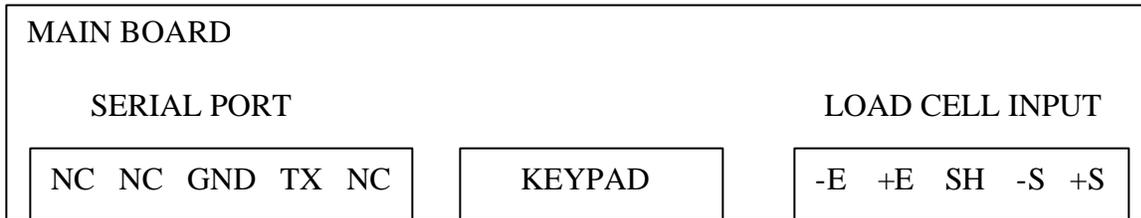
INSTRUCTION MANUAL

The MSS Digital Weight Indicator is designed for general weighing, counting and check-weighing applications. The main features of the MSS indicator are:

Full front panel setup and calibration
Easy to read large 1" (25.4 mm) LED Display
Weighing Units selection Ib, kg, Parts counting function
RS-232 data Interface
Supplies enough current for up to 4-350 ohm Load Cells
Powered by *ACIDC* Adaptor or NICAD Rechargeable Batte ry
Wall Mounting Bracket, Stainless Steel housing

GENERAL

Unpack and keep the carton for storing display and/or future transportation. In the carton you should find this instruction manual with: 1 MSS Indicator, 1 mounting bracket, 1 AC/DC Adaptor
Load cells are connected using the 5 position removable plug inside the enclosure

```
MAIN BOARD

      SERIAL PORT                             LOAD CELL INPUT

  NC  NC  GND  TX  NC        KEYPAD          -E  +E  SH  -S  +S
```

(-E) = - excitation   (+E) = + excitation   (SH) = Shield   (-S) = - signal   (+S) = + signal

KEY FUNCTIONS

ON/OFF	Turns the scale ON or OFF
ZERO	When in Gross sets Gross weight to zero if in tolerance band.
UNITS	Weighing unit conversion selection
TARE	Acquires the tare weight to 0 in either GROSS or NET mode.
GROSS/NET	Toggles between GROSS and NET weight only if tare have been acquired
PRINT	Sends data via RS232 serial port

POWER OPTIONS

Operating with the AC/DC adapter
Connect the adapter (input 110VAC-120VAC, 60 Hz output: 9VDC, 500mA) to the socket at the rear of the indicator and plug into the main AC supply. The LED at the top of the front display will be ON indicating power is present.

Operating with battery power
Rechargeable Battery (6VDC 1.2A) is inserted under the bracket inside the back cover. Connect the 2 wires from the circuit board to the battery, RED (=) Black (-).
A full charging cycle takes about 8 hours with the indicator turned off. The battery will reach full capacity providing about 20 hours of service after 3-5 full charging cycles. The power LED is RED when the battery is being charged and turns GREEN when charge is full.
A suitable Battery is available from Industrial Weighing Systems if not ordered with instrument.

SETUP MENU CHART

Front panel keys: **ZERO, UNITS, GROSS/NET** and **PRINT** are used for menu navigation.
TARE is used to enter the menu and to save selection.

F1- CLK   Time set up (Hr:Min:Sec), Date [(D-M-Y), (Y-M-D), (M-D-Y) }

F2-SLP   Battery save mode, 2 options and time interval
                 Mode 1=OFF (shut off if inactive for set time)
                 Mode 2= Standby (decimal at right digit is on, display returns when weight applied)
       SLP   NO (continuous display), 5,10, 15 (mode 1 or 2 after "X" minutes of stable weight)

F3 KEY   Cn on/oFF (counting function on or off)

F4 CHK   Check-weighing (after setting beep, set Lo then High limits, see page 3)
                 Beep –1 (no audible beep), beep-2 beep if in range, beep-3 beep outside range

F5 INP   Display internal A/D counts

F6 BAT   Reserved for adjusting DC power supply.

F7 CAL   Press TARE key
                 When **Pn** appears press and release in sequence UNIT, ZERO, TARE
                 The following menu "P" will appear.

SETTING P5, P6 AND P7 MUST BE FOR THE UNITS (Lb or Kg) CURRENTLY ON THE DISPLAY

P1 SP   A/D conversion speed (1, 2, 3, 4, 5) where 1 is fastest, 5 slowest.

P2 AUT   Power on zero (0, 2, 5, 10, 20% of capacity) if in band zero is set on power up.

P3 RAN   Manual zero band range (2, 4, 10, 20, 50, 100% capacity)

P4 AZ   Auto zero track band (0, 0.5, 1, 3, 5 display divisions)

P5 DEC   Decimal point position (0, 0.0, 0.00, 0.000, 0.0000)

P6 CAP   Capacity (enter scale capacity using keypad)

P7 INC   Display division or increment count (1, 2, 5, 10, 20)

P8 CAL   Press TARE to enter calibration (calibration procedure page 3)

P9 RS   RS-232 transmission (Aut-after each weight, Cot-continuous, Prt- use print button)

P10 Kb   Keypad beep on/oFF, (beeps when keys pressed if on).

CALIBRATION

The span value for calibration is entered in the same units (Lb or Kg) currently on the display.

1: Turn the scale ON, when in the count down sequence press and release TARE.
2: When "**Pn**" appears, press and release in sequence UNIT, ZERO, TARE
3: "**UnLoad**" will be displayed, remove all weight to set Zero, Press TARE.
4: Enter/change the display to be the same as your calibration weight then press TARE.
5: "**Load**" appears in the display, apply calibration weights to scale and press TARE
6: Indicator will store calibration and return to weighing mode.

COUNTING OPERATION   * Activated when setup menu F3 KEY is ON.

1. Place a container on the scale and zero the indicator.
2. Press UNIT key until the display will show number of samples "**P 5**".
3. To change number of samples use PRINT and GROSS/NET keys.
4. Place the required number of samples into the container and press TARE key.
5. Wait till LED pcs will turn ON and the display will show number of pieces.
6. To return to the weighing mode press UNIT key.

CHECKWEIGHING OPERATION

1:     During SETUP **F4 CHK**, if LO or/and HI values have been set to a value other than zero
        Check-weighing is ON.
2:     LED Display segments status:
        HI & LO segments   ON -load within the target range
        HI   ON -load over the high target
        LO   ON -load below the lower target
3. To have just one target LO or HI the second value in the set up menu **F4 CHK** has to be 0.
4. To stop the check-weighing set HI & LO values to 0 in set up menu **F4 CHK**.

RS-232

Baud Rate: 9600   Start Bit: 1   Data Bits: 8   Stop Bit: 1   Parity: None
Transmission only as per setting in **P9 RS**

ERROR MESSAGES

--------   The scale has been over loaded, remove excessive load,
                If error continues, contact IWSystems

Err 4   The ZERO setting range is less than the load applied.
                Remove the load and try again, if error continues, contact IWSystems

Err 6   The A/D is out of range, remove load from the scale.
                Check load cells for faults, may be display, if error continues, contact IWSystems

SPECIFICATIONS

Display 6 Digit LED, I " / 25.4mm digits
Weighing Units kg (kilograms), Ib (pounds),
Internal Resolution Up to 500,000 counts
Display Resolution Up to 15,000 counts, selectable
Display Division 1,2,5,10,20 selectable
Decimal Point 0 to 4 places, selectable
Load Cell Excitation 5 VDC, 4 x 350 ohm Load Cells
Analog Input Range from 0.5 mV/V to 3.0 mV/V
Analog Sensitivity 0.5uV/grad min., I uV /grad recommended
Conversion Rate 20 samples/sec, nominal
Calibration Push button Software
Overload Limit 102% of selected Display Resolution
Tare Range To Capacity by Subtraction
Key Functions ON/OFF, ZERO, UNITS, TARE, GROSS/NET, PRINT
Operating Temperature -10° to +40°C (14° to 104°F)
Power AC/DC Adapter 9- 12VDC, 300- 500mA or Rechargeable Battery
Dimensions 8.2"x 5.5"x 2.9" Weight Approx.4.4Ib/2kg

The specification may be changed without prior notice

LIMITED WARRANTY

The indicator is warranted to the original retail purchaser for a period of one year from the date of invoice against defects in materials and/or workmanship. During the warranty period we will repair or, at our option, replace free of charge the defective product, when used under normal conditions.

The product has to be returned to us, freight and insurance prepaid and securely packaged. Adjustment of any internal components by other than a factory authorized technician, or damage caused through negligence, abuse, accident, misuse, unreasonable use, improper service, force, foreign material inside of the product, exposure to corrosive materials or other causes not arising out of defects in material or workmanship voids warranty coverage. The manufacturer shall be the sole judge of all alleged non-conformities.
Except as provided above, no other express or implied warranty is given by the manufacturer.

Manufacturers role and exclusive liability is limited to repair or replacement of such products. The manufacturer shall not be liable for any loss, inconvenience, or damage, including without limitation direct, indirect, special, incidental or consequential damages, resulting from use or inability to use a product, any breach of warranty or any act of omission of the manufacturer, its officers or agents. As warranty legislation varies from state to state and country to country, please refer to your local Dealer **Industrial Weighing Systems** for details.