

M2000D DIGITAL SMART WEIGH SYSTEM

THE PREMIUM DIGITAL SYSTEM FOR YOUR SCALE



- TRUCK SCALES
- HOPPER SCALES
- RAIL SCALES
- FLOOR SCALES
- NEW OR RETROFIT



WESTERN SCALE CO. LTD. Port Coquitlam, B.C. Canada

www.westernscale.ca

M2000D DIGITAL SMART WEIGH SYSTEM

THE **M2000D DIGITAL SMART WEIGH SYSTEM** ALLOWS USERS TO ENJOY HIGH LEVEL DATA INTEGRITY BETWEEN THE SCALE PLATFORM AND INDICATOR FOR UP TO 1000 FEET. WEAK, SENSITIVE ANALOG LOADCELL SIGNALS ARE CONVERTED TO STRONG, NOISE-RESISTANT DIGITAL DATA INSIDE THE **M2000D DLC SMART BOX** AND TRANSMITTED TO THE INDICATOR. LONG AND SHORT CABLE RUNS ARE EASILY ACCOMMODATED AND THE USER CONTINUES TO UTILIZE THEIR MOST RELIABLE APPROVED LOAD CELLS. THE **M2000D SMART WEIGH SYSTEM** OFFERS A COMPREHENSIVE SELECTION OF PROGRAMMABLE CONTROLS DESIGNED TO FUNCTION EASILY WITH ALL WEIGHING APPLICATIONS, FROM THE MOST BASIC, TO COMPLEX INTERFACES WITH DATA COLLECTION AND MANAGEMENT SYSTEMS.

THE **SMART WEIGH DIGITAL SYSTEM** IS A UNIQUE AND RELIABLE WEIGHING METHOD. UP TO 3 SCALES CAN BE OPERATED BY A SINGLE UNIT, EASING MAINTENANCE, DATA STORAGE, AND REPORTING. YOUR INSTALLATION MAY BE FLOOR, TANK, HOPPER, HEAVY CAPACITY TRUCK OR RAILROAD TRACK SCALES. THE SMART WEIGH DIGITAL SYSTEM ALLOWS YOU TO OPERATE WITH THE HIGHEST DEGREE OF RESOLUTION, DEPENDABILITY, AND ACCURACY.

DIGITAL TECHNOLOGY BENEFITS

- ✓ UPGRADING? EASY CONVERSION FROM AN ANALOG SCALE SYSTEM.
- ✓ DIGITAL LOAD CELL SIGNALS INCREASE YOUR SYSTEM PERFORMANCE AND ACCURACY BY BEING MORE RESISTANT TO OUTSIDE INTERFERENCE AND INFLUENCES (RFI & EMI).
- ✓ STRONG DIGITAL SIGNALS DO NOT DEGRADE OVER LONG DISTANCES LIKE AN ANALOG SIGNAL, ALLOWING FOR EXTRA LONG CABLE RUNS.
- ✓ EACH LOAD CELL COMMUNICATES INDIVIDUALLY WITH THE M2000D INDICATOR, BEING PROCESSED UP TO 250 TIMES PER SECOND.

- ✓ FASTER, EASIER SCALE CALIBRATION.
(1/4 OR LESS OF CONVENTIONAL CALIBRATION TIME)
- ✓ QUICK & EASY RECALIBRATION IN THE EVENT OF A LOAD CELL REPLACEMENT.
(ACCOMPLISHED ENTIRELY FROM M2000D KEYPAD.)
- ✓ LESS MAINTENANCE AND CALIBRATION COST WITH NO IN-SCALE, PHYSICAL ADJUSTMENTS.
(AS OPPOSED TO AN ANALOG SYSTEM).
- ✓ INCREASED MOISTURE RESILIENCY FROM THE SCALE TO THE INDICATOR.
- ✓ CONTINUED USE OF STANDARD, CUSTOMER PREFERRED LOAD CELLS. THE M2000D SMART WEIGH SYSTEM IS NOT DEPENDENT ON SPECIFIC, PROPRIETARY CELLS. TOUGH, HIGH ACCURACY LOAD CELLS CAN BE USED FOR DIGITAL OR ANALOG INSTALLATIONS, KEEPING YOUR INVENTORY LOW.



MD2000-DT



DLC SMART BOX



M2000D -NSS -1

LOAD CELL PROTECTION

- ✓ YOUR SCALE IS SAFEGUARDED FROM VOLTAGE SURGES AND LIGHTNING STRIKES BY STATE OF THE ART LOAD CELL PROTECTION.
- ✓ BY OPTICALLY ISOLATING THE LOAD CELLS AND POWER (NO DIRECT ELECTRONIC CONNECTION) THE SMART WEIGH SYSTEM SIGNIFICANTLY REDUCES THE CHANCE OF DAMAGE TO YOUR LOAD CELLS.
- ✓ THE DLC SMART BOX UTILIZES 2 LAYERS OF VOLTAGE SUPPRESSION TO DIVERT SURGES TO EARTH GROUND AND AWAY FROM YOUR SCALE.

LOAD CELL DIAGNOSTICS

- ✓ INSTANT, AUTOMATIC SYSTEM DIAGNOSTICS DETECT AND IDENTIFY FAILURES IN SYSTEM COMPONENTS.
- ✓ EACH LOAD CELL IS IDENTIFIED BY ITS DIGITAL SIGNATURE, ALLOWING A VITAL BREAKDOWN OF SECTION, CORNER, AND INDIVIDUAL LOAD CELL PERFORMANCE.
- ✓ LOAD CELL FAILURES RESULT IN IMMEDIATE NOTIFICATION TO THE USER (EVEN MARGINAL FAILURES THAT COULD GO UNDETECTED BETWEEN SERVICE CHECKS ON CONVENTIONAL SYSTEMS).
- ✓ ALL THIS DATA IS DISPLAYED DIRECTLY ON THE EASY TO READ M2000D DISPLAY.

INDICATOR FEATURES

SMART WIRE

- ✓ EASY INTERACTION WITH PC'S, PRINTERS, REMOTE DISPLAYS, BARCODE READERS, ETC.
- ✓ 6 SOLID STATE RELAYS.
- ✓ 6 REMOTE INPUTS: ZERO, TARE, GROSS, PRINT, CLEAR, & ADD
- ✓ ONE 4 - 20MA ISOLATED INTERFACE.

APPLICATION PROGRAMS

- ✓ CUSTOM PROGRAMS VIA TICKET MACROS.
- ✓ A WIDE VARIETY OF FACTORY STANDARD PROGRAMS FOR TRUCK IN/OUT, AXLE WEIGHING, CATTLE, ETC.
- ✓ CUSTOM APPLICATION SMART1 OPTION.
- ✓ CONTAINS FACTORY STANDARD REPORTS FOR TRUCK IN/OUT AND TARE LISTINGS.
- ✓ CUSTOM REPORTS EASILY ACCOMMODATED THROUGH TICKET MACROS.

MEMORY

- ✓ WITH PC INTERFACE YOU CAN DOWNLOAD AND SAVE. CALIBRATION SETUP AND TICKET FORMATS.
- ✓ STORES UP TO 200 PROGRAMMABLE TICKETS (4 KB).
- ✓ STORES 150 TRUCKS IN FLASH MEMORY WITH AN ADDITIONAL 150 IN STATIC MEMORY.

EXPERTISE

FOR FORTY YEARS, WESTERN SCALE HAS BEEN AN INDUSTRY PIONEER, PROVIDING ITS CUSTOMERS WITH SUPERIOR SCALE SYSTEMS TO WEIGH, MONITOR, AND CONTROL MATERIAL THROUGHOUT PROCESSING. WE ARE COMMITTED TO DEVELOPING TAILORED WEIGHING SOLUTIONS THAT MEET TODAY'S REQUIREMENTS WHILE INCORPORATING THE FLEXIBILITY FOR TOMORROW'S NEEDS.



M2000D -NSB



THE M2000D DIGITAL SMART WEIGH INDICATOR DESIGNED FOR YEARS OF EFFICIENT PERFORMANCE

INDICATOR PERFORMANCE

Unit Conversion	lbs/kg
Zero Tracking	1-99% of d or 1,2,3d
Resolution	+/- 256000 a/d counts per load cell
Sampling Rate	100 times a second per AD/channel
Span Stability	2ppm/Celsius
Zero Stability	5nv/Celsius
Linearity Correction	5 span entries
Calibration Method	Calibration through software stored in Flash memory
Calibration Sealing	Class 1 Audit Trail System, password protected
Filtering	FAST STEP quick response vibration dampening
Modes	Display from CH1, CH2, CH3, and Total of all Channels
Firmware Upgrading	Flash Memory - In field Firmware upgrading without affecting calibration data
DLC remote load cells	16 Load cells using two DLC slaves
Display	6 Digit, 7 Segment 2-54cm (1in.) Red LED
Tare	Keyboard and scale tare, multiple tare ID's can be stored in memory
Time and Date	Y2K compliant time/date clock, internal battery backup
Truck Database	Capable of storing 150 truck ID's with associated tare weights
Truck In/Out Loop	Truck In/Out Loop program for weigh In/Out applications
Ticket Editor	Create custom tickets for serial printers. Indicator can store and recall different tickets
Power on	Selectable ON/OFF switch

DLC LOAD CELL INPUTS

DLC Remote Load Cells	8 AD converters per DLC remote slave (16 Load Cells Max.)
Input Range	4 ranges 0-9mV, 0-19mV, 0-39mV and 0-79mV
Excitation	5 VDC, 16x350, 16x700, ohm in total
Resolution	+/- 256000 A/D counts per load cell
DLC Cable length	500 feet - DLC Remote slave may be up to 1000 feet from indicator with remote power supply

COMMUNICATIONS

Serial Outputs	2 full duplex RS232/RS422
IO Interface	SMART WIRE peripheral expansion - RS485 multidrop
External IO - Setpoints	6 channel setpoint via SMART WIRE (optional)
External IO - Analog Output	4 -20mA board via SMART WIRE (optional)
External IO - Digital Inputs	6 optically isolated inputs via SMART WIRE (optional)
Networking	RS485 Multidrop Networking of up to 32 indicators as slaves

ELECTRICAL

Power Requirements	100-240 VAC 50-60Hz
Temperature Range	-10°C to +40° C

APPROVALS

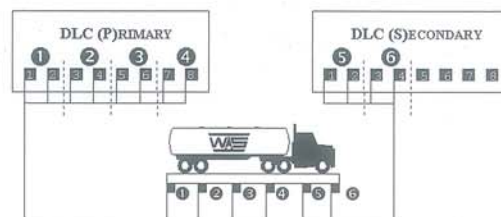
Canada	Class III 10000 Class IIHD 25000
USA	NTEP Class III/IIIL 10000

ENCLOSURE

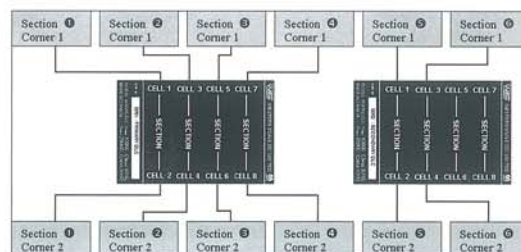
M2000D-DT	6x9.75x2.5 Stainless Steel Desktop (External Power Supply)
M2000D-NSB Swivel Stand	7.25x10x3 Stainless Steel Nema with mounting for one option board
M2000D-NSS Light Weight	8x10x4 Stainless Steel Nema with option board mounting plan
M2000D-NSS-1 Heavy Duty	8x10x4 Stainless Steel Nema4 with option board mounting plan

SECTIONAL EXAMPLE

This example illustrates the allocation of sections across two DLC Slaves



The diagram below outlines the connection of a 6 sectional scale, starting with the section on the Primary DLC terminal box and ending on the secondary DLC.



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 **Made in Canada**

