

# Intrinsically Safe Indicators



Model 350 IS

Model 355 IS



# Intrinsically Safe Indicators

## Putting theory into practice

Designed to meet global standards in metrology and electrical safety, the Model 350 IS and Model 355 IS deliver precision weighing in hazardous environments. Smart features such as quick calibration, sleep modes for extended battery life, a fast update rate, and process control configuration offer value-added flexibility. The Model 350/355 IS operates on AC-DC power and has a stainless steel, corrosion resistant enclosure for years of reliability, and reduced cost of ownership.

To complement our intrinsically safe instruments, we offer a complete line of bench platforms, floor scales and tank weighing assemblies approved for use in hazardous areas.



## 350 IS and 355 IS Worldwide Approvals

Safety, Emissions, and Legal for Trade standards around the globe.

### Safety Approvals

INDICATOR/OPTION	FM
M350IS/M355IS (5 V Excitation)	I.S. for CL I-III, DIV 1, GP A-G I.S. for CL I, ZN 0, GP IIC-IIA N for CL I, DIV 2, GP A-D N for CL I, ZN 2, GP IIC-IIA S CL II-III, DIV 2, GP F-G T4 (Ta=50 °C)
M350IS/M355IS (8 V Excitation)	I.S. for CL I-III, DIV 1, GP C-G I.S. for CL I, ZN 0, GP IIB-IIA N for CL I, DIV 2, GP A-D N for CL I, ZN 2, GP IIC-IIA S CL II-III, DIV 2, GP F-G T4 (Ta=50 °C)
Battery Supply Option 24H3502-201C0	I.S. for CL I-III, DIV 1, GP A-G I.S. for CL I, ZN 0, GP IIC-IIA N for CL I, DIV 2, GP A-D N for CL I, ZN 2, GP IIC-IIA S CL II-III, DIV 2, GP F-G T3 (Ta=40 °C)
AC to DC Power Supply Option 24H3501-200C0 (Single Output)	A.I.S. for CL I-III, DIV 1, GP A-G CL I, ZN 1, AEx m [ia] GP IIC-IIA N for CL I, DIV 2, GP A-D N for CL I, ZN 2, GP IIC-IIA S CL II-III, DIV 2, GP F-G S CL I-III, DIV 1, GP A-G* T4 (Ta=50 °C) * When installed in a CL I-III, DIV 1, GP A-G location, conduit must be used on the AC supply cable.
AC to DC Power Supply Option 24H3501-200C0 (Dual Output)	A.I.S. for CL I-III, DIV 1, GP C-G* CL I, ZN 0, GP IIB-IIA* N for CL I, DIV 2, GP A-D N for CL I, ZN 2, GP IIC-IIA S CL II-III, DIV 2, GP F-G S CL I-III, DIV 1, GP C-G* T4 (Ta=50 °C) *When installed in a CL I-III, DIV 1, Group C-G location, conduit must be used on the AC supply cable.

INDICATOR/OPTION	CSA		
M350IS/M355IS (5 V Excitation)	Class I, Div 2, Groups ABCD Class I, Groups ABCD Class II, Groups EFG Class III	Ex nL IIC Ex ia IIC	T4 at Tamb=50 °C T4 at Tamb=50 °C
M350IS/M355IS (8 V Excitation)	Class I, Div 2, Groups CD Class I, Div 2, Groups CD Class II, Groups EFG Class III	Ex nL IIC Ex ia IIB	T4 at Tamb=50 °C T4 at Tamb=50 °C
Battery Supply Option 24H3502-201C0	Same as above		
AC to DC Power Supply Option 24H3501-200C0 (Single Output)	Same as above		
AC to DC Power Supply Option 24H3501-200C0 (Dual Output)	Same as above		

INDICATOR/OPTION	ATEX
M350IS/M355IS (5 V Excitation)	II 1 GD T 117 °C EEx ia IIC T4, Tamb=50 °C
M350IS/M355IS (8 V Excitation)	II 1 GD T 117 °C EEx ia IIB T4, Tamb=50 °C
Battery Supply Option 3502	II 2(1)GD T 193 °C EEx ia IIC T3, Tamb=40 °C
AC to DC Power Supply Option 3501	II 2(1)GD T 64 °C EEx m[ia] IIC T4, Tamb=50 °C

### Safety/Emission Approvals

INDICATOR/OPTION	CE Declaration of Conformity Conforms to the following Directives and Standards:
M350IS/M355IS (5 V Excitation)	89/336/EEC Electromagnetic Compatibility Directive 73/23/EEC Low Voltage Equipment Directive 90/384/EEC For non-automatic weighing instrument  EN 50014:1997+A1:1999+A2:1999 (Safety) EN 50020:2002 (Safety) EN 50028:1987 (Safety) EN 50281-1-1:1998 (Safety) EN 50284:1999 (Safety)  EN 61326:1998, Class B (Electrostatic Emissions) EN 61000-3-2:2000 (Electrostatic Emissions) EN 61000-3-3:1994 (Electrostatic Emissions)  EN 61326:1998, Industrial Locations (Electromagnetic Immunity)  EN55022, FCC part 15 ICES-003, Class A
M350IS/M355IS (8 V Excitation)	Same as Above
Battery Supply Option 24H3502-201C0	Same as Above
AC to DC Power Supply Option 24H3501-200C0 (Single Output)	Same as Above
AC to DC Power Supply Option 24H3501-200C0 (Dual Output)	Same as Above

### Legal for Trade

INDICATOR/OPTION	NTEP
M350IS/M355IS (5 V Excitation)	Yes
M350IS/M355IS (8 V Excitation)	Yes


INDICATOR/OPTION	PTB
M350IS/M355IS (5 V Excitation)	Yes
M350IS/M355IS (8 V Excitation)	Yes
Battery Supply Option 24H3502-201C0	Yes
AC to DC Power Supply Option 24H3501-200C0 (Single Output)	Yes
AC to DC Power Supply Option 24H3501-200C0 (Dual Output)	Yes


 FM United States  
Factory Mutual Research Corporation  
Project ID# 3018357

 NTEP United States  
National Type Evaluation Program (NTEP)  
COC# 98-092A3

 PTB Europe  
EEC directive  
D03-09-0152 PTB 1.12.4012274

 CE Europe  
Intertek Report# 3068936001

 CSA Canada  
CSA International  
CSA# 04CSA224640

 ATEX Europe  
Nemko 04ATEX1356X

# HAZARDOUS AREA

## Standard IS Indicator Features

- Display Choices: LCD, LCD Backlit, or LED
- Up to 200 hour continuous use with battery module
- Real time clock with battery backed time and date
- Two (2) Communication Ports
- Stainless Steel IP66/NEMA 4X enclosure design
- Power up to four (4) 350 ohm load cells
- Update Flash firmware enhancements with GSE Reflash utility
- AC Power Module can be located in safe or hazardous area
- START, STOP, TARGET keys for Setpoint Control functions (355 IS)
- Two (2) Intrinsically Safe inputs for remote key functions
- 8 V Excitation Module increases signal input level



■ 350 IS  
Model 350 IS with LED Display



■ 355 IS  
Model 355 IS with LCD Display,  
powered by battery module

## Applications

- Fertilizer and Grain Processing & Loading
- Paint and Ink Manufacturing and Mixing
- Fueling Stations Gaseous or Liquid
- Paint and Chemical Processing
- Portable Drum Weighing and Filling

# SAFE AREA

## Communicate with the Hazardous Area

To complement our intrinsically safe indicator, a Safe Area Hub is available. An optional Fiber Optic Communication Kit is installed in the intrinsically safe indicator and a standard Model 350/355 Indicator (*Safe Area Hub*). Via this fiber optic connection, the Safe Area Hub will echo the intrinsically safe indicator's display weight/data, control setpoint contacts, analog output levels, and communications to other safe area devices. The Safe Area Hub can be configured to remotely control the intrinsically safe instrument or function only as a remote display.

Fiber optic cable available in plastic core fiber or hard clad silica (HCS).

## Safe Area Options

- **RS485 Module:** Utilizes RS232 Comm Port 1 (Not compatible with 20 mA Module)  
Isolated, half or full duplex, Distance 4000 ft., 9600 baud max
- **20 mA Module:** Utilizes RS232 Comm Port 1 (Not compatible with RS485 Module)  
Isolated, TX-active or passive, RX-passive only, 9600 baud max., 12 VDC, 1000 ft. loop
- **Fiber Optic Communication Kit**
- **Battery Charger:** Charges in 3.5 hrs, Universal AC Input 85-265 VAC, 50/60 Hz
- **Scaleable Analog Output Module:** 0-10 mA, 4-20 mA, 0-10 VDC
- **Setpoint Output:** 3 N.O. outputs, 20-240 VAC @ 1A or 5-60 VDC @ 2A, optically isolated



Safe Area Model 355 (Hub)  
with International Keypad

# Power Options

## Battery Module



- Stainless steel enclosure
- Mounts to Indicator swivel bracket
- 200 hour continuous use with LCD Display + 1 loadcell
  - 100 hour continuous use with LED + 1 loadcell
- Battery recharge cycle is 3.5 hours with fully discharged battery

## AC Power Supply



- Stainless steel enclosure
- Universal mounting bracket
- 13 ft. (4 m) power cord
- 90-250 VAC input 50/60 Hz
- Powers up to 2 indicators (restrictions apply)

## Power Extension Cable

- Mount AC/DC Power Supply remotely from indicator
- 25 ft (7.62 m) to 50 ft (15.24 m) length



# Specifications

350 IS / 355 IS	
<b>PERFORMANCE</b>	
Full Scale (F.S.)	Selectable to 999,999
Resolution	20 Bit A/D Converter, 100,000d Displayed, 1,000,000d Internal
A/D Conversion	60 Hz
Zero Track	0-100% of F.S.
Operating Temperature	-10 °C to +40 °C
Units of Measure	lb, kg, oz, g, lb oz
<b>ELECTRICAL</b>	
Power Requirement	Rechargeable Battery or AC Power Supply
Excitation Voltage	5 VDC or optional 8 VDC
Excitation Current	57 mA max. (5 V exc) or 91 mA max. (8 V exc)
F.S. Signal Input	0.1 mV/V min.-10 mV/V max.
Signal Connection	4 Lead or 6 Lead
<b>CONTROL</b>	
Remote Input	2 Momentary Contacts, TARE, PRINT, ZERO
<b>ENCLOSURE</b>	
Shipping Weight	7 lb (3 kg)
Material	Stainless Steel NEMA 4/IP66 Design
Mounting	Swivel Bracket
<b>DISPLAY</b>	
LED	6-Digit Red Display 0.8" (22 mm) Height
LCD/LCD Backlit	6-Digit, 1.0" (25.4 mm) Height
Annunciators	lb, kg, Qty, Setpoint 1, 2, 3, Center Zero, Motion, Gross, Net, Low Battery, 3rd units
<b>COMMUNICATION</b>	
Comm 1	RS232 with Hardware Handshaking (CTS/RTS)
Comm 2	TTL Port for optional Fiber Optic Module
<b>KEYPAD</b>	
350 IS	5 Key, Chemical Resistant Elastomeric (Rubber)
355 IS	22 Key, Full Numeral, Chemical Resistant Elastomeric (Rubber)

### PRODUCT LINE

- Parts Counting
- Floor Scales
- Portable Scales
- Bench Platforms
- Indicators
- Overhead Weighing
- Airline Systems
- Hazardous Area Weighing
- Software/Peripherals
- Checkweighers
- Tank & Vessel Weighing Assembly
- Heavy Capacity Vehicle Scales

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