



"Setting The Standard For Supplier Excellence"

Pioneering Level Measurement For Powder/Bulk Solids Applications



CONTINUOUS LEVEL MONITORING



Flexar®

SiloPatrol®

FEATURES

- ▶ Proven Technology
- ▶ Reliable TDR (a.k.a. Reflex Radar)
- ▶ Smart RS-485 or Analog Output
- ▶ 3rd Generation PC-Based Server/Client Inventory Management Software
- ▶ Easy to Install and Setup
- ▶ Remote Electronics Version
- ▶ Hazardous Location Approvals
- ▶ Real Time Level Measurement

GUIDED WAVE RADAR

CABLE-BASED SMART SENSOR

- ▶ Patent-Pending Technology
- ▶ Robust Design
- ▶ Smart Sensor Technology
- ▶ Virtually Maintenance-Free
- ▶ Multi-Functional NEMA4 HMI
- ▶ 3rd Generation PC-Based Server/Client Inventory Management Software
- ▶ Output and Display Accessories
- ▶ Wireless Sensor Interface
- ▶ Hazardous Location Approvals

POINT LEVEL MONITORING



SafePoint®

KA, KAX

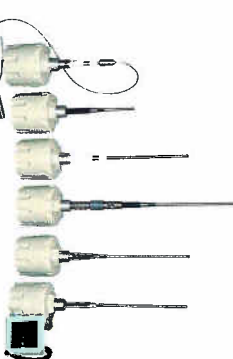
ROTARY PADDLE

- ▶ Self-Validating "TRUE"
- ▶ Fail-Safe Design
- ▶ Patented Magnetic Sensing
- ▶ Industry Leading Motor Shut-Off
- ▶ Twist On/Off Cover
- ▶ Microcontroller-Based Reliability
- ▶ Sense and Fault Outputs
- ▶ Status Indicating Light
- ▶ Sealed Bearing Design
- ▶ Lasts Longer
- ▶ Hazardous Location Approvals

INDUSTRY LEADING MOTOR SHUT-OFF

- ▶ Economical and Versatile
- ▶ Twist On/Off Cover
- ▶ Simple Electro-Mechanical Operation
- ▶ Rugged, Cast Aluminum Construction
- ▶ Dependable Design Reduces Component Wear
- ▶ Sealed Bearing Design
- ▶ Lasts Longer
- ▶ Hazardous Location Approvals

POINT LEVEL MONITORING



TrueCap® MK-2

TrueCap® MK-2e

RF CAPACITANCE

- ▶ Superior 0.5pF Sensitivity
- ▶ Microcontroller Reliability
- ▶ Universal Power Supply
- ▶ Automatic Build-Up Immunity
- ▶ Temperature Compensation
- ▶ Push-Button Indicating and Test
- ▶ Local Status Indicating Light
- ▶ Fail-Safe on Power Failure
- ▶ Remote Calibration
- ▶ Remote Electronics Version
- ▶ Probe Variations
- ▶ Hazardous Location Approvals

PROXIMITY SWITCH

- ▶ Superior 0.5pF Sensitivity
- ▶ Automatic Build-Up Immunity
- ▶ Sensitivity and Delay Adjustments
- ▶ Simple Calibration
- ▶ Local Status Indicating Light
- ▶ Fail-Safe on Power Failure
- ▶ Remote Electronics Version
- ▶ Economical
- ▶ Probe Variations
- ▶ Hazardous Location Approvals

PZP



VIBRATORY

- ▶ Diamond-Shape Single Probe Design
- ▶ No Calibration Required
- ▶ Exceptional Sensitivity
- ▶ Universal Power Supply
- ▶ Fail-Safe on Power Failure
- ▶ Immune to Changes in Material Composition
- ▶ Probe Extensions Available
- ▶ Sing
- ▶ No C
- ▶ Univ
- ▶ Lock
- ▶ Fail-
- ▶ Plas
- ▶ Imm
- ▶ Mat
- ▶ Prot
- ▶ Hazi

APPLICATIONS

- ▶ Continuous Level Monitoring of Solids and Liquids
- ▶ Measuring Range to 100ft (30m) for Solids and 200ft (60m) for Liquids
- ▶ Up to 392°F (200°C)
- ▶ Unaffected by Airborne Dust, Bulk Density, Temp and Other Properties
- ▶ Remote Inventory Monitoring
- ▶ Vendor Managed Inventory
- ▶ Multi-User Access via LAN, Internet/WAN or Dial-Up
- ▶ Cement, Flyash, Flour, Powders, Aggregates, Lime, Grains and More

- ▶ Inventory Monitoring of Bulk Solids and Liquids
- ▶ Vendor Managed Inventory
- ▶ Remote Inventory Monitoring
- ▶ Multi-User Access via LAN, Internet/WAN or Dial-Up
- ▶ Manual/Automatic Operation
- ▶ Unaffected by Airborne Dust or Acoustic Noise
- ▶ Plastics, Chemicals, Cement, Sand, Powders, Aggregates, Liquids and More

SPECIFICATIONS

- ▶ **Power Requirements:** 100-240 VAC; 24VAC/DC
- ▶ **Ambient Temp:** -5° to +120°F (-20° to +50°C)
- ▶ **Int Bin Temp:** Ordinary Locations -20° to +300°F (-30 to +150°C); Hazardous Locations -20 to +392°F (-30° to +200°C)
- ▶ **Output:** RS-485, Half-Duplex; 4-20mA, 350 Ohm Max or passive
- ▶ **Mounting:** 1-1/2" NPT, 1-1/2" BSP, ANSI or DIN Flanges
- ▶ **Pressure:** 580psi (40 bar)
- ▶ **Approvals:** CSA, UL, Class 1 & 2; CSA, UL, Ordinary
- ▶ **Certifications:** NEMA 4, IP66, CE Mark

- ▶ **Power Requirements:** 115 VAC or 230 VAC
- ▶ **Ambient Temp:** SMU: -40° to +150°F (-40° to 65°C); HMI/AOE: -4° to +131°F (-20° to 55°C)
- ▶ **Int Bin Temp:** Up to 300°F (149°C)
- ▶ **SMU Output:** Standard: RS-485 half-duplex, isolated / Pulse: 1 pulse per 1/10" or dm, isolated / Analog: 4-20 mA, isolated; 500 Ohms max. loop resistance
- ▶ **Mounting:** Aluminum flange - 7" B.C.
- ▶ **Approvals:** CSA, UL, Ordinary
- ▶ **Locations, Class II:** ATEX, IIC D 1/2
- ▶ **Certifications:** NEMA4, IP66, CE Mark

- ▶ Most Granular, Pelletized and Powder/Bulk Applications
- ▶ Materials from 5 lb/ft³ (80 kg/m³) to 100+ lb/ft³ (1600 kg/m³)
- ▶ Critical Applications Where Self-Validation is Required
- ▶ Vessels with Changing Contents
- ▶ Feed/Grain, Plastics, Wood, Sand/Gravel, Concrete/Aggregate, Mining, Pre-Mix Ingredients and More

- ▶ Most Granular, Pelletized and Powder/Bulk Applications
- ▶ Materials from 5 lb/ft³ (80 kg/m³) to 100+ lb/ft³ (1600 kg/m³)
- ▶ Applications Where Low-Cost, Low-Tech Controls Are Preferred
- ▶ Vessels with Changing Contents
- ▶ Feed/Grain, Plastics, Wood, Sand/Gravel, Concrete/Aggregate, Mining, Pre-Mix Ingredients and More

Power Reqs.: 115 VAC, 230 VAC, 24 VAC, 48 VAC, 12/24 VDC

- ▶ **Ambient Temp:** -40° to +150°F (-40° to +65°C)
- ▶ **Int Bin Temp:** to +250°F (121°C) (Hi-Temp Unit: to 750°F/399°C)
- ▶ **Sense Output:** (1) SPDT; 5 amps @ 250 VAC/30 VDC max.
- ▶ **Fault Output:** (1) SPDT; 5 amps @ 250 VAC/30 VDC max.
- ▶ **Mounting:** 1-1/4" NPT or 1-1/2" BSPPT alum
- ▶ **Pressure:** 30 psi (2 bar) max
- ▶ **Approvals:** CSA, UL, Class I & II, Ord. Loc./ATEX, IIC 1/2 D, IECEx DIP
- ▶ **Certifications:** NEMA 4, IP66, CE Mark

Power Reqs.: 115 VAC, 230 VAC, 24 VAC, 48 VAC, 12/24 VDC

- ▶ **Ambient Temp:** -57° to +200°F (-49° to +93°C)
- ▶ **Int Bin Temp:** to +300°F (149°C) (Hi-Temp unit: to 750°F/399°C)
- ▶ **Output:** Up to (3) SPDT; 15 amps @ 250 VAC
- ▶ **Mounting:** 1-1/4" NPT or 1-1/2" BSPPT alum
- ▶ **Pressure:** 30psi (2 bar) max
- ▶ **Approvals:** UL, CSA, Class I & II, Ord. Loc./ATEX, IIC 1/2 D, IECEx DIP
- ▶ **Certifications:** NEMA 4, IP66, CE Mark

- ▶ Solids, Slurries and Liquids
- ▶ Excellent Performance in Solids Over 15 lb/ft³ (240 kg/m³)
- ▶ Sticky, Conductive or Corrosive Materials
- ▶ Vessels with Changing Temp
- ▶ High Temperature & Vibration
- ▶ Applications Needing FDA Material Compatibility
- ▶ Chemicals, Feed/Grain, Coal/Fly Ash, Cement, Food, Plastics and More

- ▶ Solids, Slurries and Liquids
- ▶ Ideal for Most Solids Over 15 lb/ft³ (240 kg/m³)
- ▶ Sticky, Conductive or Corrosive Materials
- ▶ Most Materials Under 1/2 inch (13 mm) Diameter
- ▶ High Temperature & Vibration
- ▶ Applications Needing FDA Material Compatibility
- ▶ Chemicals, Feed/Grain, Coal/Fly Ash, Cement, Food, Plastics and More

Power Reqs.: Universal 48 to 240VAC or 24 to 48 VDC

- ▶ **Ambient Temp:** -40° to +150°F (-40° to +65°C)
- ▶ **Int Bin Temp:** Alum mount: to +176°F (80°C); SS mount: to 400°F (204°C); Split architecture: to 450°F (232°C)
- ▶ **Output Relay:** DPDT isolated contact; 5 A @ 250 VAC or 30 VDC
- ▶ **Mounting:** 1-1/4" NPT or 1-1/2" BSPPT alum, Optional 3/4" NPT 316SS
- ▶ **Pressure:** 50-150 psi (3.5 - 40 bar)
- ▶ **Approvals:** CSA, UL, Class I&II, Intrinsically Safe, Ordinary Locations
- ▶ **Certifications:** NEMA 4, IP66, CE Mark (Ordinary Locations Only)

Power Reqs.: 115 or 230VAC, 24VDC or 24 to 48 VDC

- ▶ **Ambient Temp:** See MK-2
- ▶ **Int Bin Temp:** See MK-2
- ▶ **Output Relay:** SPDT isolated contact; 5 A @ 250 VAC or 30 VDC
- ▶ **Mounting:** See MK-2
- ▶ **Pressure:** See MK-2
- ▶ **Approvals:** See MK-2
- ▶ **Certifications:** See MK-2

Power Reqs.: PAC-30U: 20-265 VAC; PDC-30: 10-40 VDC

- ▶ **Ambient Temp:** -13° to +176°F (-25° to 80°C)
- ▶ **Output:** PAC-30U: N.O./N.C. field selectable / PDC-30: NPN or PNP
- ▶ **Mounting:** 30mm thread
- ▶ **Load Current:** PAC-30U: 10-500mA / PDC-30: 0-200mA
- ▶ **Approvals:** UL, CSA, Ordinary Locations (PAC-30U)
- ▶ **Certifications:** NEMA 4, IP67, CE Mark

Power Reqs.: Universal 20-250VAC, 20-250 VDC

- ▶ **Ambient Temp:** -22° to +140°F (-30° to 60°C)
- ▶ **Int Bin Temp:** Std Models: to 176°F (80°C); Hi-Temp, Remote Electronics Model: to 248°F (120°C)
- ▶ **Output Relay:** SPDT; 5 amps @ 250 VAC maximum
- ▶ **Mounting:** 1-1/2" NPT, 304SS
- ▶ **Pressure:** 150psi (10.4 bar)
- ▶ **Certifications:** NEMA 4, IP65



BULLETIN 353

BULLETIN 343

BULLETIN 253

BULLETIN 213

BULLETIN 413

BULLETIN 413

BULLETIN 453

BULLETIN 523

POINT LEVEL MONITORING



MK-2 TrueCap[®] MK-2e

PROXIMITY SWITCH

- ▶ Superior 0.5pF Sensitivity
- ▶ Automatic Build-Up Immunity
- ▶ Sensitivity and Delay Adjustments
- ▶ Simple Calibration
- ▶ Local Status Indicating Light
- ▶ Fail-Safe on Power Failure
- ▶ Remote Electronics Version
- ▶ Economical
- ▶ Probe Variations
- ▶ Hazardous Location Approvals



- ▶ Available in AC or DC
- ▶ Field Selectable Normally Open or Normally Closed (AC Only)
- ▶ Economical
- ▶ Simple, Solid State Operation
- ▶ LED Status Indicator
- ▶ Field-Adjustable Calibration
- ▶ Potted Circuitry

- ▶ Solids, Slurries and Liquids
- ▶ Ideal for Most Solids Over 15 lb/ft³ (240 kg/m³)
- ▶ Sticky, Conductive or Corrosive Materials
- ▶ Most Materials Under 1/2 inch (13 mm) Diameter
- ▶ High Temperature & Vibration
- ▶ Applications Needing FDA Material Compatibility
- ▶ Chemicals, Feed/Grain, Coal/Fly Ash, Cement, Food, Plastics and More

Power Reqs.: 115 or 230VAC, 24VDC
Ambient Temp: See MK-2
Int Bin Temp: See MK-2
Output Relay: SPDT isolated contact; 5 A @ 250 VAC or 30 VDC
Mounting: See MK-2
Pressure: See MK-2
Load Current: PAC-30U: 10-500mA / PDC-30: 0-200mA
Approvals: UL, CSA, Ordinary Locations (PAC-30U)
Certifications: NEMA 4, IP67, CE Mark

Power Reqs.: PAC-30U: 20-265 VAC; PDC-30: 10-40 VDC
Ambient Temp: -13° to +176°F (-25° to 80°C)
Output: PAC-30U: N.O./N.C. field selectable / PDC-30: NPN or PNP
Mounting: 30mm thread
Load Current: PAC-30U: 10-500mA / PDC-30: 0-200mA
Approvals: UL, CSA, Ordinary Locations (PAC-30U)
Certifications: NEMA 4, IP67, CE Mark

POINT LEVEL MONITORING



G, GX, GX-SS

DIAPHRAGM TYPE & TILT SWITCHES

- ▶ Economical, Reliable, Durable Operation
- ▶ Low-Profile Mounting Minimizes Protrusion into Vessel
- ▶ Multiple Diaphragm Materials Available
- ▶ Adjustable Sensitivity
- ▶ Over-Pressure Protection
- ▶ Ultra-Sensitive Switch Option
- ▶ Hazardous Location Approvals



TC-1, TC-3

- ▶ Low-Cost, High Level Detection
- ▶ No Calibration Required
- ▶ Switch is Triggered When Tilted Approximately 17°
- ▶ Easy Installation
- ▶ Paddle and Ball Type Actuators Available
- ▶ Adjustable Measurement Height

- ▶ Free-Flowing Solids
- ▶ 10-60 lbs/ft³ (160-960 kg/m³) Density
- ▶ Ideal for Budget Constrained Applications
- ▶ Ideal for Feed Industry
- ▶ Plugged Chute Applications
- ▶ Abrasive Materials (Hycar Cover)
- ▶ Feed/Grain, Light Powders and Granules, Plastics, Rubber and More

Int Bin Temp: Neoprene: -40° to +180°F (-40° to 82°C); Teflon[®]/321SS: -40° to +250°F (-40° to 121°C)
Output: SPDT; 15 amps @ 250VAC max
Mounting: 7-1/2" (190.5 mm) B.C.
Pressure: Atmospheric only
Approvals: UL, CSA, Class II, & Ordinary Locations
Certifications: NEMA 4, IP56, CE Mark (Ordinary Locations Only)

- ▶ High Level Detection of Powders, Pellets and Granules
- ▶ TC-3: 15 - 60 lb/ft³ (240-960 kg/m³) Materials
- ▶ TC-1: 45+ lb/ft³ (>720 kg/m³) Materials
- ▶ Open Stock Piles
- ▶ Detects Conveyor Overload
- ▶ Pet Food, Plastic Pellets, Aggregates, Rocks, Sand and More

Operating Temp: TC-3: -40° to +175°F (-40° to 80°C); TC-1: -40° to +250°F (-40° to 121°C)
Output: TC-3: SPDT, 10 amps @ 250 VAC maximum / TC-1: SPDT, 15 amps @ 250 VAC maximum
Mounting: TC-3: suspend by chain, 3/4in (19mm) ID eyebolt / TC-1: suspend by chain, 1-3/32in (27.7mm) ID eyebolt
Approvals: Ordinary Locations
Certifications: NEMA 4, IP56, CE Mark (Ordinary Locations Only)

SOLIDS FLOW



SFD-2 & SFI

MICROWAVE

- ▶ Non-Intrusive, Non-Contact Devices
- ▶ Excellent Sensitivity
- ▶ Maintenance Free - No Moving Parts
- ▶ Relay (SFD-2) or Analog (SFI) Output
- ▶ Hazardous Location Approvals

- ▶ Senses Flow/No-Flow
- ▶ Conditions in Gravity Chutes and Pneumatic Lines
- ▶ Detects Flow Stoppage Caused by Bridging, Plugging or Equipment Failure
- ▶ Verifies Flow for Bagging or Batching Operations
- ▶ Dusty Applications
- ▶ Feed, Plastic, Pet Food, Ores, Sawdust, Fly Ash, Coal, Limestone and More

Sensor:
Ambient Temp: -40° to +185°F (-40° to 85°C)
Process Temp: to +250°F (121°C) max
Pressure: Teflon: 75psi (5bar) intermittent/Ryton: 300psi (20bar)
Mounting: 1-1/4" NPT alum.
Approvals: CSA, Class II
SFD-2 Power Supply:
Power Reqs: 100-240 VAC
Operating Temp: -40° to +158°F (-40° to 70°C)
Output Relay: DPDT, 5A@250VAC, 30VDC
Approvals: CSA, Ordinary Locations
Certifications: CE Mark

CUSTOMER SERVICE

SecureCareSM

QUALITY ▶ **VALUE** ▶ **EDUCATION** ▶ **SUPPORT**
 Monitor is committed to "Setting The Standard For Supplier Excellence". Our goal is to deliver a matchless combination of product quality, low total cost, and ease of purchase.

Monitor's **SecureCareSM** is a complete customer support program providing hassle-free transactions. Easy and accurate transactions mean no costs stemming from annoyance, irritation or misapplication. **SecureCare** offers:

- ▶ **Fast access to sales and technical personnel**
- ▶ **Expert advice based on five decades of experience in bulk solids**
- ▶ **Exceptional product literature and award winning tools to simplify product selection**
- ▶ **Durable and reliable products**
- ▶ **2-Year Warranty**
- ▶ **A world-class, full featured web site packed full of information and solutions**
- ▶ **Industry exclusive authoritative Blog on "Level Measurement"**
- ▶ **On-time, quick delivery within 48 hours for in-stock items**
- ▶ **Affordable field service and support**

SecureCareSM starts from your first contact with Monitor, guides you through the selection, purchase and installation of our products, and supports you into the future, for as long as those products are in service.

We continually challenge ourselves at Monitor to "raise the bar" and expand the support services we provide to our family of customers. Let us know what more we can do for you!

Learn more about **SecureCareSM**, at www.monitortech.com/secure.shtml



