

NEW**CYBER SECURITY
EXEMPT**

**100% ANALOG METER REPLACEMENT
FOR SIGNAL POWERED:
Current Loops, AC (V, A, W, Hz) and DC (V, A & W)
NQA1, APP. B & MIL/AEROSPACE GRADES AVAILABLE**

PRELIMINARY

SSAM-N
(Patent
Pending)

FEATURES:

- * Cyber Security Exempt (No Microprocessors)
- * 101 Bars and 4 1/2 Digits
- * Universal Custom Colors with pure white LEDs
- * Custom "Colored" Displays
- * Post Mortem Signal Fail Alarm
- * Brightness Control
- * All Field Configurable
- * Customs Welcome
- * Lifetime Warranty

ANSI 4" SWITCHBOARD



REPLACES DB40 F.F.&F.
Other Models on Request.

SPECIFICATIONS (@25° C)**(Preliminary)**

- *Accuracy: Digits: $\pm 0.1\%$ of F.S., ± 1 LSD
- *Accuracy: Bar: $\pm 1\%$ of Full Scale
- *Conversion Rate: 3/second
- *Display Brightness: Adjustable 50-100%
- *Signal Power Required: 20-100mW
- *Input Signal Range: Current Loops: 3.6-26 or 9-55 mA; VDC: 7-130V; VAC: 30-140V; AAC: 1-4A; WAC: 100-400W; Hertz: 30-450 Hz
- *Note: You must use C.T. & P.T. with all A.C. options.
- *Note: If your signal can produce >20 mW, you can use the **SSAM** or contact Otek.
- *Temperature Coefficient: ± 50 PPM/ $^{\circ}$ C
- *Operating Temperature: -10 to $+60$; Storage: -20 to $+70$ $^{\circ}$ C
- *CCMR: >90 dB@50-60Hz
- *Humidity: 5-95% RH non-condensing
- *Front Panel: NEMA 3. NEMA 4X optional
- *Failed Signal Detect: ~ 20 second duration after > 1 minute "On" @ $>50\%$ of F.S.
- *Calibration Check: 2 years recommended.

Note 1: Electrical specifications for E and M grades are the same as Industrial, unless otherwise specified.

HIGHLIGHTS:

- *No Microprocessors or digital assets included \therefore Not **cyber security** vulnerable.
- *100% Signal Powered (like analog meters) for 4-20 & 10-50mA current loops, AC Volts, Amps, Hertz and Watts and DC V, mA & Watts
- *Our patented Signal Failure Alarm flashes its display for ~ 20 second duration (post-mortem) if the signal fails.
- *100% Form, Fit & Function (wire-by-wire) plug & play replaces analog meters
- *101 LED segment bar for 1% resolution with custom colors for alarm zones (bar)
- *4 1/2 digit (1.9.9.9.9) bright 0.6" LED display.

How do we do it? We eliminated any and all "digital assets," (microprocessors, etc.,) as defined by some nuclear regulations and replaced them with the latest hardware and added our patented (and patent pending) technology. We married this to the most advanced LED technology (approaching organic LED) to give you super bright bargraph and digital displays. These displays are visible across the room when viewed in a typical Instrument & Control Room (I&C) because we incorporate "pure white" LEDs only, with the option for custom tinted scale plates to meet your needs. Conclusion: The only analog portion of the **SSAM** is the input signal!

Why WHITE LEDs? The Power of the Powerless™! To design an automatic tricolor LED bargraph (as on our NTM series) it would require a microprocessor or excessive hardware. Our customer base, nuclear, MIL and aerospace, depends on our reliability for 100% operation 24/7, and access to spare units is not always an option. That's why we have designed the **SSAM** with identical hardware on all models and white LEDs. So if you need a spare for any function, location or input, all you do is change the scale plate (containing your custom color bands such as **red** for alarm, **yellow** for caution and **green** for normal), change the plug-in jumpers and recalibrate (if needed) the Zero & Span. That's all. One (1) model does it all, as long as its housing mechanical is the same! That's why we call it **SSAM**.

Otek specializes in customization and the reverse engineering of obsolete meters. Send us your challenge!

Watch 1 minute NTM video: **You Tube™**

<http://youtu.be/WXi970VXIzM>

**Want to know more about
New Technology and in-
crease your profits?**



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IN
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SSAM-N ORDERING INFORMATION 8-4-17

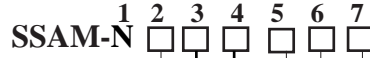
Notes:

Grade 0: Plastic Case;
 Grade I: Metal case
 Grade M: To agreed-to MIL-Std. Contact Otek.
 Grade E: To agreed-to EPRI standards. Contact Otek
 9. Custom. Contact OTEK.

2. Otek will build to certain Nuclear or MIL-Standards but testing and confirmation of compliance, if required, will be quoted as a separate line item.

3. For custom colored translucent scale plates for the bargraph and digit section, use Digit 6, option 9 and contact Otek.

4. Contact Otek for external power and other input and output options.



GRADE & CASE (1, 2)

- 0.....Industrial & Plastic
- I.....Industrial & Metal
- 2.....Industrial & Plastic NEMA 4X
- 3.....Industrial & Metal NEMA 4X
- M.....To Mil-Spec & Metal (Contact OTEK)
- E.....To EPRI-Nuclear & Metal (Contact OTEK)
- 9.....Custom (Contact OTEK)

INPUT SIGNAL (ALL SIGNAL POWERED){4}

- 00.....4-20mA Current Loop (Powerless™)
- 01.....Volts A.C.
- 02.....5 Amps A.C.
- 03.....Watts A.C.
- 04.....Hertz A.C.V.
- 09.....Custom (Contact OTEK)
- 16.....7-140 Volts A.C./D.C., Signal Power
- 17.....10-50mA, Current Loop (Powerless™)
- 18.....10-500m ADC, Signal Power

RANGE/CALIBRATION

- 0....Standard (0-F.S. & 0.0-100.0)
- 9.....Custom (Contact OTEK)

SCALE PLATE

- 0.....Standard (Percent & All Green)
- 9.....Custom (Contact OTEK)

BAR/DIGIT COLORS (3)

- 0.....Standard (All Green)
- 9.....Custom (Contact OTEK)

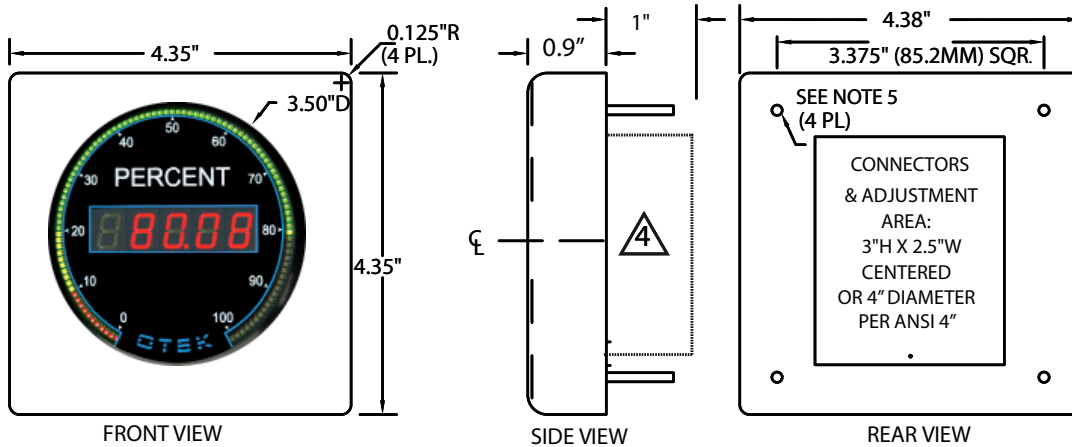
AVAILABLE COLORS USING OTEK'S COLOR-X™ OVERLAY
 (Select Digit 5, Option 9 and provide the range and color number(s).)

BROWN RED ORANGE YELLOW GREEN BLUE VIOLET GREY WHITE



Note: If required, specify the specific colors for the bar and the digits. Example (Digit 5, Option 9): Bar: 0-10 red, 11-20: yellow; 21-80: green; 81-90: yellow; 91-100: red. Digits: All blue.

SSAM-N MECHANICAL DRAWING



NOTES:

1. STANDARD PANEL MOUNTING PER ANSI 4"(3.375") CASE CAN ALSO BE MOUNTED IN 1/4 DIN PANEL CUTOUT (92x92mm).
2. CONNECTORS AND 3.375" STUDS SPACING MEET ANSI39.1 STANDARD FOR SWITCHBOARD METERS. CONNECTORS FALL WITHIN EXISTING "BARREL" (IF ANY) CUTOUT (4"Ø)
3. WIRE: 26-16GA
4. SHIELDED VERSIONS WILL EXTEND ~1" BEHIND THE PANEL.
5. METAL VERSION HAS #8-32X 3/4" MOUNTING STUDS; PLASTIC HAS #4-40X1/2" MOUNTING STUDS.