

The information in this document is reviewed regularly and any necessary changes will be incorporated in the next revision.

We welcome any suggestions for improvement.

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January 2004



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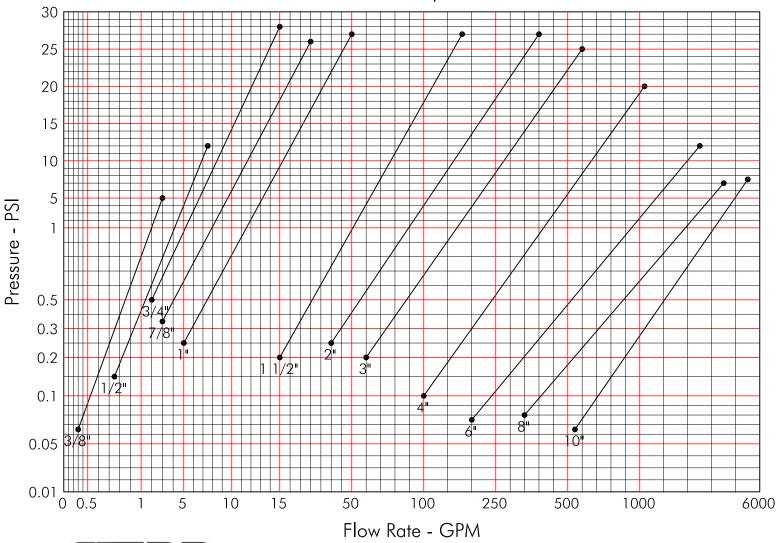


	Turbine Flow Meters Flow Range								
Si	ze							Max Output	
Inch	MM	GPM	ВРМ	BPD	LPM	M³/D	Pulses P/Gal	Frequency Pulses P/ Sec	
3/8	10	.3 – 3	.00707	10 – 100	1.14 – 11.36	1.6 – 16	22000	1100	
1/2	13	.75 – 7.5	.0117	25 – 250	2.84 - 28.39	4 - 40	14500	1815	
3/4	19	2 - 15	.0533	68 – 515	7.57 – 56.78	11 – 80	2950	740	
7/8	22	3 – 30	.0771	100 – 1000	11.36 – 113.56	16 – 160	2350	1175	
11	25	5 – 50	.11 - 1.19	170 – 1700	18.93 – 189.27	27 – 270	900	750	
1 1/2	38	15 – 180	.35 - 4.3	515 – 6000	56.78 - 681.35	80 – 1100	325	975	
2	51	40 - 400	.9 – 9.3	1300 – 13000	151 – 1514	210 - 2100	55	365	
3	76	60 – 600	1.4 - 14.3	2100 - 21000	227 – 2271	320 - 3200	57	570	
4	102	100 – 1200	2.4 -28.5	3400 - 41000	380 - 4542	545 - 6541	30	600	
6	152	200 – 2500	4.7 – 60	6800 – 86000	757 – 9464	1090 - 13628	7	290	
8	203	350 – 3500	8.3 - 83	12000 - 120000	1325 - 13250	1907 – 19078	3	175	
10	550	550 - 5500	13 - 130	19000 - 180000	1892 - 18926	2725 -27255	1.6	147	

M	aterial Specifications
Flow Meter Body	316 S.S. or A-286 Alloy
Support Vanes	316 S.S.
Rotor	CD4MCu
Sleeve Bearings	Tungsten Carbide
Shaft	Tungsten Carbide
Thrust Ball	Ceramic
Perfo	ormance Specifications
Repeatability	Within ±0.1% of indicated flow throughout the linear flow range
Accuracy	Within $\pm 1\%$ of reading Note $3/8'' \pm 2\%$



Pressure Drop Curves







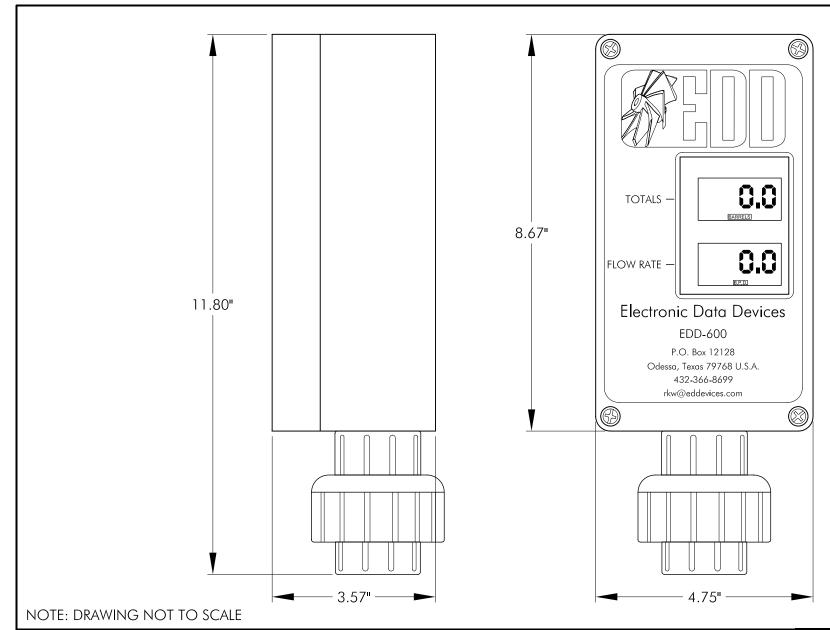


EDD-600 Totalizer

Electronic Data Devices' EDD-600 is a self-contained totalizer and flow rate indicator designed to mount directly on the turbine flow meter or remotely mounted with optional hardware. By using state of the art low power CMOS intergrated circuits and liquid crystal displays, long battery life is attained.

SPECIFICATIONS

Power	4 C Batteries	Battery Life	2 - 4 Years
Flow Rate	Digital 6 Digit	Flow Rate Units	Specified by customer
Totalizer	Digital 6 Digit	Totalizer Units	Specified by customer
Totalizer Reset	With optional switch	Divisor Capability	From 1 - 131071
Accuracy	± 1 Count	Mounting	Directly on meter
Temperature Range	-20° to 155° F	Housing	Polyester Weatherproof
Input Frequency	0 - 2500 Hz	Input Amplitude	20 - 5000 mVpp



SPECIFICATIONS:

ACCURACY: ±1 COUNT

TEMPERATURE RATING: -20° F - +150° F

NOTE:

TOTALIZER INSTALLATION DRAWING

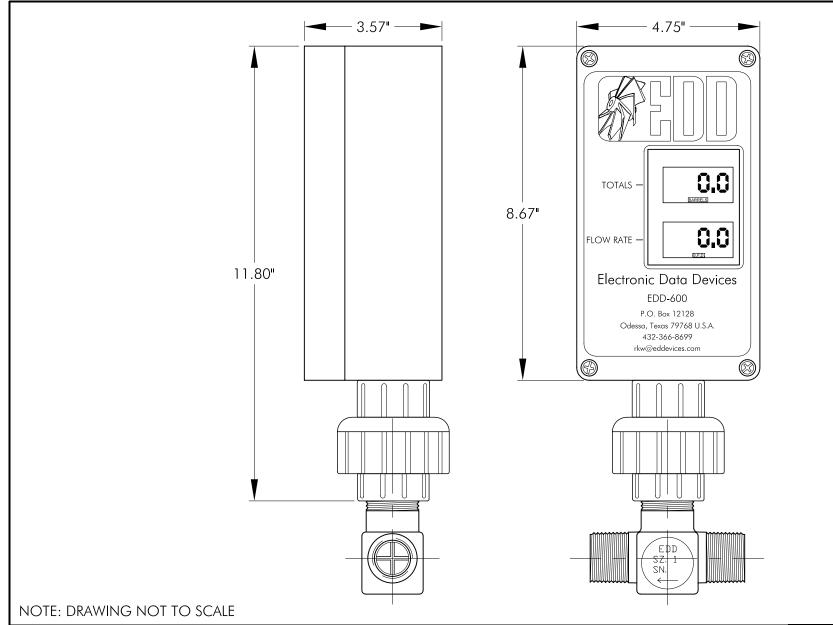
EDD-600, PART NO.9.600

P.O. Box 12128 Odessa, TX 79768

Phone: 432-366-8699 Fax: 432-366-1106

E-mail: rkw@eddevices.com Website: www.eddevices.com





SPECIFICATIONS:

ACCURACY: ±1 COUNT

TEMPERATURE RATING: -20° F - +150° F

NOTE:

TOTALIZER INSTALLATION DRAWING

EDD-600, PART NO.9.600

P.O. Box 12128 Odessa, TX 79768

Phone: 432-366-8699 Fax: 432-366-1106

E-mail: rkw@eddevices.com Website: www.eddevices.com



EDD800 Digital Totalizer





The EDD800 is a self contained digital totalizer designed to mount directly on the turbine flow meter or remotely mounted with optional hardware. The totals and flow rate units can be set to any industry standard units or be set to different units for each display. The EDD800 is easily resettable to zero out the total units displayed. The unit is available with a NEMA4 or EXP housing. Intrinsically safe,ATEX, IECEx, FM and CSA units are available.



Power - (1) 3.6 V DC C-cell Lithium Battery

Display - LCD 7 Digits Totals, 11 Digits Rate

Accuracy - ±0.1 %

Temperature Range - -40 to 175 °F Input Frequency- 0 - 300 Hz

Battery Life - 2 - 4 Years

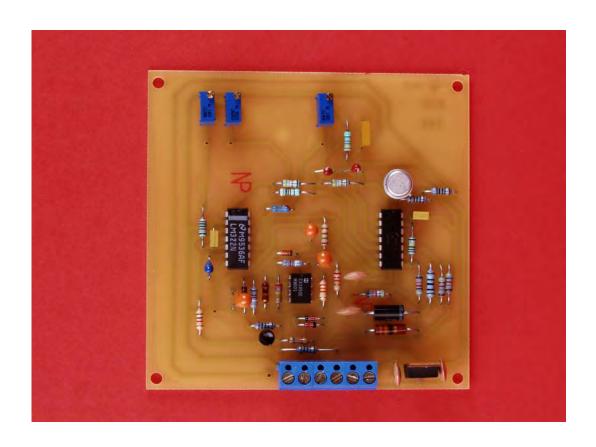
Units - Customer Specified

Divisor Capability - 1 - 9999999

Housing - NEMA4 or EXP

Options - Pulse Out, 4-20 mA or Hart





EDD-340 4-20 mA Converter

The EDD-340 circuit card will accept signal inputs from turbine flow meters or any pulsing device with acceptable wave forms and signal levels. The card has a 4 - 20 mA output. The card is 4" x 4" and mounts via 4 standoffs and screws to a backplate. Hookup is via 7 wire compression terminals. The card may be calibrated to any customer specified full scale output.

Power 24 Vdc or Optional 12 Vdc

Current Pull 50 mA Maximum

Input Frequency 0 - 2500 Hz

Input Amplitude 30 mV - 30 V peak to peak

Accuracy \pm 1 Percent

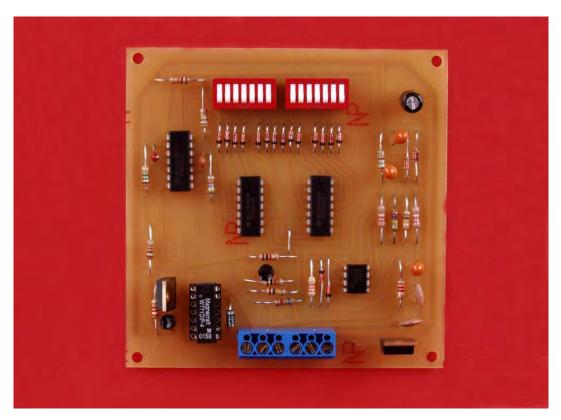
Output 4 - 20 mA into a 250 Ohm Load

P.O. Box 12128 Odessa, Texas 79768 USA Phone 432-366-8699

Fax 432-366-1106 Email rkw@eddevices.com

Website www.eddevices.com





EDD-530 Pulse Output Card

The EDD-530 card will accept signal inputs from turbine flow meters or any pulsing device with acceptable wave forms and signal levels. The output is a dry contact closure or an optional voltage output. The card is 4" x 4" and mounts via 4 standoffs and screws to a backplate. Hookup is via 6 wire compression terminals. The card may be calibrated in any customer specified engineering units up to a maximum divisor of 16383.

Power 12 or 24 Vdc (must spec.)

Divisor Capability 1—16383

Pulse Output Units Specified by customer

Accuracy \pm 1 Count

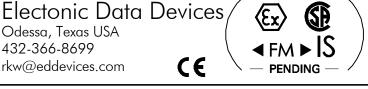
Temperature Range -20° F - 140° F

Input Frequency 0 - 2500 Hz

Input Amplitude 30 mV - 30 V peak to peak

Pulse Output Duration 150 ms or customer specified Note: Circuit Current Pull

Voltage Output Option Discuss with Factory 24 Vdc - 35 mA



PREAMPLIFIER

MAG TYPE

STANDARD AND MICROPOWER

PRODUCT DESCRIPTION

EDD's mag-preamps are designed to convert low level sinusoidal signals into stable square wave pulses. They can be used with all magnetic VR type pickups, allowing for greater pickup to target gaps and longer signal transmission distance. The pucks are built to fit compact "ELBY" and "Y" type explosion-proof enclosures, refer to bulletin 4001.

For Intrinsically Safe certified see brochure: IS4022, 29

* MICROPOWER versions are available in the ____ and ___ models for ultra low current draw, ideal for battery applications.

SPECIFICATIONS

Vs, Supply Voltage: 7.5 (12)to 30 Vdc regulated

3.6 Vdc min., unregulated * MICROPOWER: 2 to 6 Vdc

Is, Supply Current: $\leq 2 \text{ mA} @ 5 \text{ Vdc}$

≤ 4 mA @ 12 Vdc ≤10 mA @ 24 Vdc ≤20 mA @ 30 Vdc (OC) *MICROPOWER: ≤ 0.06 mA ≤ 5 mA (Current Loop, 4029)

Vo, Signal Out: 0 - 10 V NPN @ £ 20mA sink 0 - 5 V NPN 0 - Vs NPN

> 0 - Vs, NPN, OC, (Open Collector) 0 - Vs, PNP, OC, 50 mA Sourcing

____ only: 4 to 20 mA current sink:

 ± 2 mA, 4 to 40 V supply, see page 2 for wiring diagram & R Load spec.

Input Sensitivity: 30, 12 or 5 mVpp

* MICROPOWER: 12 to 40 mV

Frequency Range: 3 Hz to 10 kHz at specified sensitivity

≤ 40 kHz at increased signal level, varies with target size, distance and pickup sensitivity. (Option: ≤ 100 kHz) *MICROPOWER: ≤ 1 Hz to 30 kHz

Rise/Fall Time (N.L.): $04 / .18 \mu s$ (Nom.)

Distance: 500 ft. max. pickup to preamp

Temperature Range: -40° to 221 ° F (-40° to 105 ° C)

Compliance: CE: EN55011, EN50022-2

TERMINAL/PIN CONNECTIONS

___. & ___.:

1. Input Vdc

4. Mag Pickup

2. Common 5. Mag Pickup

3. Pulse out (+)

6. Pulse out (-)

___: MS3106A-10SL-3S

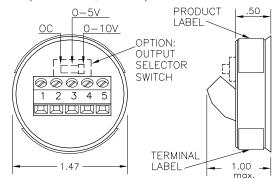
A: Input Vdc

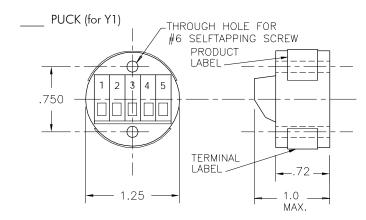
B: Common C: Pulse out

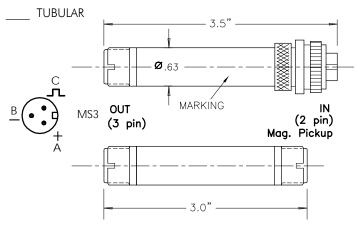
OPTIONS: Please contact sales. For junction boxes & adapters see spec. 4001

For connector cable assemblies, please see spec. 3000

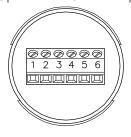
_ PUCK (for ELBY 1/2, 3/4 - Y2)

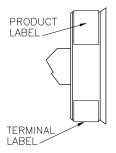




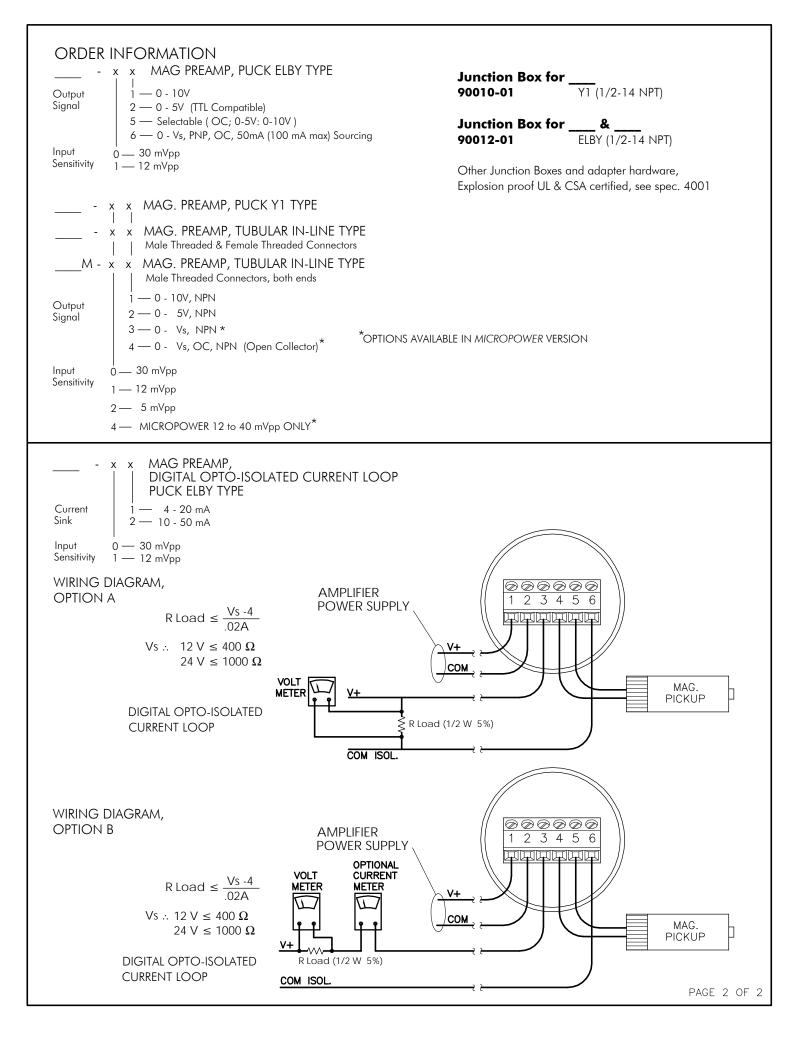


PUCK (for ELBY 1/2, 3/4 - Y2)
Digital Opto-Isolated Current Loop





PAGE 1 OF 2





CE

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4.0420 FTC CONVERTER MAG TYPE CURRENT OUTPUT

PAGE 1 OF 2

PRODUCT DESCRIPTION

The FTC converter receives frequency input and converts it to a proportional 4-20mA output. It has been configured to fit a compact 1/2 & 3/4" NPT "ELBY" explosion proof enclosure. The frequency range is field selectable to fit most applications. ZERO and SPAN adjustments make it easy to calibrate to almost any measurement range, with little interaction between the adjustments.

The power supply input is designed to cover the entire range of commonly available DC power, with no selecting or adjusting.

SPECIFICATIONS

Vs Supply Voltage: 9 - 30 VDC @ ≤ 4mA

100 VAC, reversed leads Input Protection:

Short to +VDC, Common or **Output Protection:**

Signal out Continuous

Frequency Input Range: F Hi: Adjustable full scale:

1100 Hz to 10 KHz*

(18 kHz with signal >50 mV,

1% linearity)

F Lo: Adjustable full scale:

75 Hz to ≥1100 Hz

Input Sensitivity: Standard 50 mVpp

High 12 mVpp

Linearity:* 0.5% max., 0.15% typ.

Output Setting Time: Full scale change to 95%

of final value 100mS to 3 sec.

Output Ripple and Noise:* .2 mA max p -p, 1% of Full Scale

.02 mA typ., .01% of Full Scale

*(Parameter Varies with Calibration Setting)

Temperature Coefficient: 25° to 40°C, 0.13 %/°C,

Operating Temp. Range: -40° to +85 °C (-40 to +185 °F)

ZERO/SPAN Adjustment Interaction: < 1%

3 WIRE OUTPUT VERSION: 20 mA Range

Minimum Output Current: 0.07 mA

Maximum Output Current: 24.1 mA

(Full Scale Min. Cal., Zero Cal.Set to 4 mA)

Terminal Connections:

1. Input VDC 4. Mag Pick-up 2. Common 5. Mag Pick-up

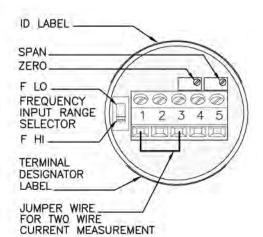
3. Signal Out

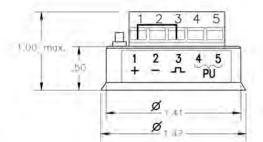
Wiring Options & R Load specification: See page 2

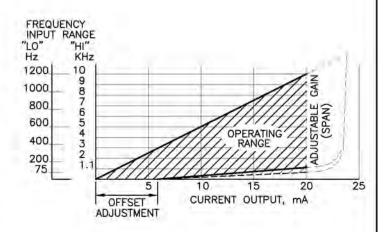
Compliance: CE: EN55011, EN50022-2

(FM, CSA & CENELEC Pending) INTRINSICALLY SAFE CLASS I, II, III DIV 1

GROUP ABCDEFG, ZONE 0

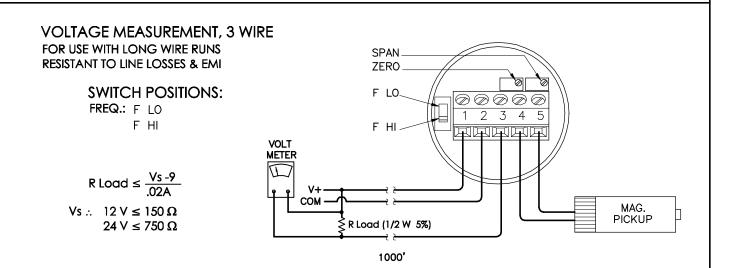


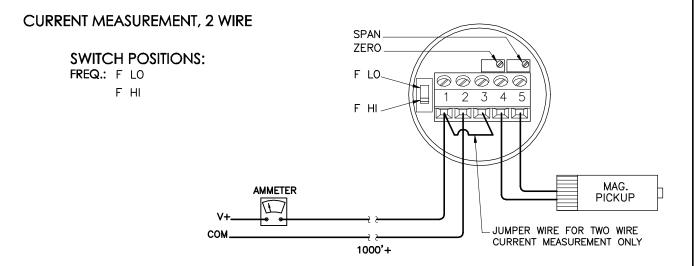


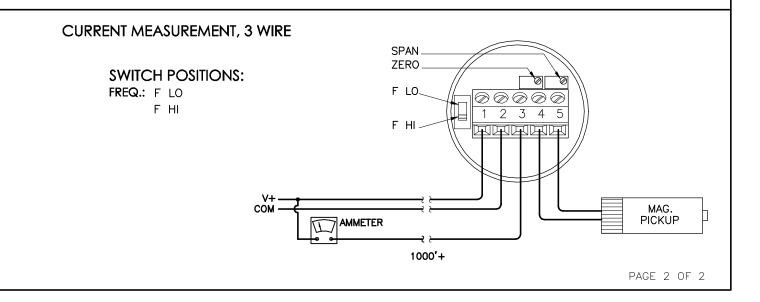


EDD FREQUENCY-CURRENT CONVERTER 4.0420

Installatinos must meet the requirements of intrinsically safe systems for hazardous (classified) locations and must follow details specified in FMRC engineering control drawing #85049











4.303 MAGNETIC PICKUP

Electronic Data Devices' magnetic pickups are manufactured to cover a wide range of metering applications, including our meters and most others popular brands of meters.

SPECIFICATIONS

DC Coil Resistance	1450 ohms	Output Volts	2.5Vpp (turbine meters)
Inductance	800 mh	Pole Piece	Extended
Magnetization	900 Gauss	Construction	303/304 S>S> solid epoxy
Temperature Range	-150 $^{\circ}$ to +250 $^{\circ}$ F	Connection	2 pins gold plated
Overall length	2.25"	Mating Connector	MS 3106A-10SL-4S
Thread Size	5/8 X 18	Thread Length	1.13"



Odessa, Texas USA 432-366-8699 sales@eddevices.com

CE

4.303 Digital Magnetic Pick-Up 5/8 - 18 UNF

Product Description

Electronic Data Devices' Digital 2 PIN magnetic pick-ups feature high output voltage and great configuration diversity to meet a wide range of applications.

A sanitary version to NEMA 6, IP65 & IP67 is also offered.

All Models are also available with an optional temperature probe.

Specifications

DC-Coil: Resistance/Inductance/Output Voltage

1500 Ohms/ 800 mH/ 240 Vpp

Magnetization: 950 GAUSS 0.106 DIA.

Temperature Range: -100° to 250° F (-73° to 120° C)

Pole Piece: Extended Pole, 0.106 dia. x 0.020 L

Construction: 303/304 Stainless Steel

Solid Epoxy Encapsulation

All standard connectors have gold

plated pins.

Application: For gear pitch range of 24 DP or

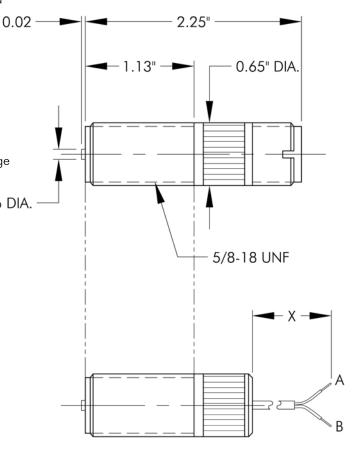
coarser depending on pole piece.

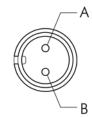
CE-Compliance: EN55011, EN50022-2

Options: For different lenght, material of con

struction, configuration, special pole piece type, thread size, hermetically sealed, precision custom magnetiza tion, intergal temperature sensor, con nector and/or cable termination,

please contact factory.





PIN Out

A +Voltage B -Ground

Connector Type Pick-up Part Number: 4.303 Wlre Lead Pick-up Part Number: 4.303L Connector Part Number: MS3106-10SL-4S



Odessa, Texas USA 432-366-8699 sales@eddevices.com

CE

4.304 Digital Magnetic Pick-Up 5/8 - 18 UNF

Product Description

Electronic Data Devices' Digital 2 PIN magnetic pick-ups feature high output voltage and great configuration diversity to meet a wide range of applications.

A sanitary version to NEMA 6, IP65 & IP67 is also offered.

All Models are also available with an optional temperature probe.

Specifications

DC-Coil: Resistance/Inductance/Output Voltage

1500 Ohms/ 800 mH/ 240 Vpp

Magnetization: 950 GAUSS 0.106 DIA.

Temperature Range: -100° to 250° F (-73° to 120° C)

Pole Piece: Extended Pole, 0.106 dia. x 0.020 L

Construction: 303/304 Stainless Steel

Solid Epoxy Encapsulation

All standard connectors have gold

plated pins.

Application: For gear pitch range of 24 DP or

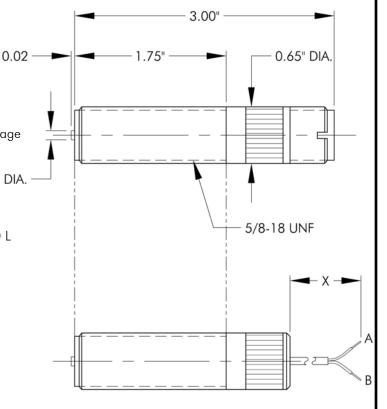
coarser depending on pole piece.

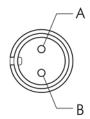
CE-Compliance: EN55011, EN50022-2

Options: For different length, material of con

struction, configuration, special pole piece type, thread size, hermetically sealed, precision custom magnetiza tion, intergal temperature sensor, con nector and/or cable termination,

please contact factory.





PIN Out

A +Voltage B -Ground

Connector Type Pick-up Part Number: 4.304 Wlre Lead Pick-up Part Number: 4.304L Connector Part Number: MS3106-10SL-4S





4.5015U MAGNETIC PICKUP

Electronic Data Devices' magnetic pickups are manufactured to cover a wide range of metering applications, including our meters and most others popular brands of meters.

SPECIFICATIONS

Supply Voltage	7.5 to 30 Vdc	Signal Output	0 - 10 V
Frequency Range	3 - 10 kHz	Pole Piece	Extended
Magnetization	900 Gauss	Input Sensitivity	30 mVpp
Temperature Range	-40 $^{\circ}$ to +250 $^{\circ}$ F	Connection	3 pins gold plated
Overall length	3.0"	Mating Connector	MS 3106A-10SL-3S
Thread Size	5/8 X 18 UNF	Thread Length	1.75"



Odessa, Texas USA 432-366-8699 sales@eddevices.com

4.5015U Digital Magnetic Pick-Up 5/8 x 18 UNF

Product Description

Electronic Data Devices' Digital 3 PIN magnetic pick-up produces a digital frequency output directly proportional to speed. The internal amplifier provides for constant pulse shaping, signal amplitude, logic-level output, improved signal-to-noise ratio, usable at lower RPM's and greater air gap between the sensor and the actuator.

MICROPOWER wersions are available for ultra low current draw, ideal for battery appliactions.

A sanitary version to NEMA 6, IP65 & IP67 is also offered.

All Models are also available with an optional temperature probe.

Specifications

V_s, Supply Voltage: 7.5 (12) to 30 Vdc regulated

3.6 Vdc min., unregulated MICROPOWER: 2 to 6 Vdc

I_s, Supply Current: < 2 mA @ 5 Vdc

<4 mA @ 12 Vdc <10 mA @ 24 Vdc <20 mA @ 30 Vdc (OC) MICROPOWER: < 0.06 mA

0 - 10 V, NPN V_O, Signal Out: 0 - 5 V, NPN $@ \leq 20 \text{ mA sink}$

0 - V_s, NPN 0 - V_s, NPN, OC (Open Collector)

Input Sensitivity: 30, 12 or 5 mVpp

MICROPOWER: 12 - 40 mV

< 3 Hz to 10 kHzFrequency Range:

> < 40 kHz at increased signal level, varies with target size, distance and

pick-up sensitivity. (Option: $\leq 100 \text{ kHz}$)

MICROPOWER: ≤1 Hz to 30 kHz

Rise/Fall Time: $0.04 / 0.16 \, \mu s$

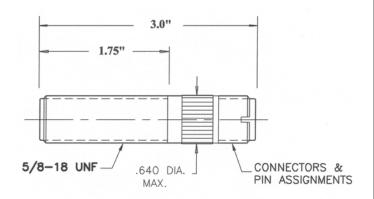
-40° to 248° F (-40° to 120° C) Temperature Range:

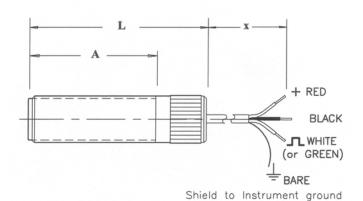
(Option: -45° to 140° C)

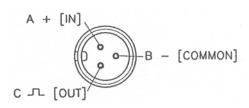
Standard: ≥ 900 GAUSS Magetization:

Low Mag: 250 GAUSS, typ.

Sensor Body: 303 Stainless Steel







(Not connected to shell)

PIN Out

A +Voltage B -Ground

C Signal Output Square Wave

Connector Type Pick-up Part Number: 4.5015U Wire Lead Pick-up Part Number: 4.5015L Connector Part Number: MS3106A-10SL-3S



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4.5024 Digital Magnetic Pick-Up 11/16 - 24 UNEF-2A

Product Description

Electronic Data Devices' Digital 3 PIN magnetic pick-up produces a digital frequency output directly proportional to speed. The internal amplifier provides for constant pulse shaping, signal amplitude, logic-level output, improved signal-to-noise ratio, usable at lower RPM's and greater air gap between the sensor and the actuator.

MICROPOWER wersions are available for ultra low current draw, ideal for battery appliactions.

A sanitary version to NEMA 6, IP65 & IP67 is also offered.

All Models are also available with an optional temperature probe.

Specifications

V_s, Supply Voltage: 7.5 (12) to 30 Vdc regulated

3.6 Vdc min., unregulated MICROPOWER: 2 to 6 Vdc

 $I_{s'}$ Supply Current: \leq 2 mA @ 5 Vdc

—4 mA @ 12 Vdc

≤10 mA @ 24 Vdc

≤20 mA @ 30 Vdc (OC)

MICROPOWER: < 0.06 mA
</p>

 V_{o} , Signal Out: 0 - 10 V, NPN 0 - 5 V, NPN 0 - 5 V, NPN

0 - V_s, NPN 0 - V_s, NPN, OC (Open Collector)

Input Sensitivity: 30, 12 or 5 mVpp

MICROPOWER: 12 - 40 mV

Frequency Range: \leq 3 Hz to 10 kHz

 \leq 40 kHz at increased signal level, varies with target size, distance and

pick-up sensitivity. (Option: \leq 100 kHz)

MICROPOWER: ≤1 Hz to 30 kHz

Rise/Fall Time: $0.04 / 0.16 \mu s$

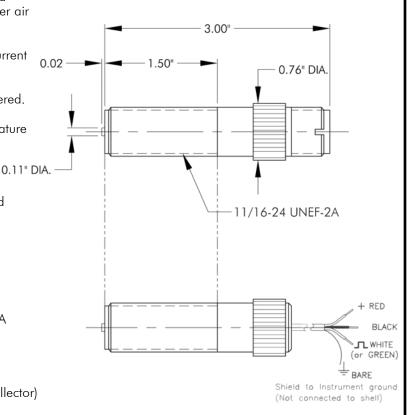
Temperature Range: -40° to 257° F (-40° to 125° C)

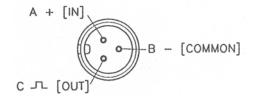
(Option: -45° to 140° C)

Magetization: Standard: ≥ 900 GAUSS

Low Mag: 250 GAUSS, typ.

Sensor Body: 303 Stainless Steel





PIN Out

A +Voltage B -Ground

C Signal Output Square Wave

Connector Type Pick-up Part Number: 4.5024 Wlre Lead Pick-up Part Number: 4.5024L Connector Part Number: MS3106A-10SL-3S



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CE

4.5050 Digital Magnetic Pick-Up 5/8 - 18 UNF

Product Description

Electronic Data Devices' Digital 2 PIN magnetic pick-ups feature high output voltage and great configuration diversity to meet a wide range of applications.

A sanitary version to NEMA 6, IP65 & IP67 is also offered.

All Models are also available with an optional temperature probe.

Specifications

DC-Coil: Resistance/Inductance/Output Voltage

3000 Ohms/ 1500 mH/ 290 Vpp

Magnetization: 600 GAUSS 0.106 DIA.

Temperature Range: -150° to 330° F (-101° to 165° C)

Pole Piece: Extended Pole, 0.106 dia. x 0.020 L

Construction: 303/304 Stainless Steel

Solid Epoxy Encapsulation

All standard connectors have gold

plated pins.

Application: For gear pitch range of 24 DP or

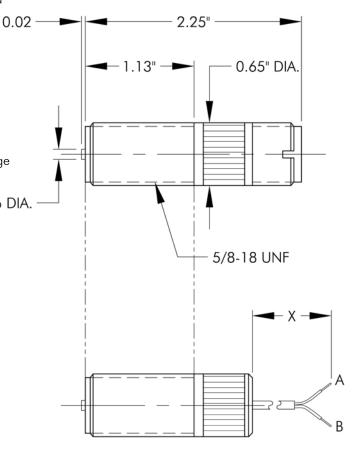
coarser depending on pole piece.

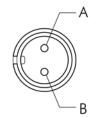
CE-Compliance: EN55011, EN50022-2

Options: For different length, material of con

struction, configuration, special pole piece type, thread size, hermetically sealed, precision custom magnetiza tion, intergal temperature sensor, con nector and/or cable termination,

please contact factory.





PIN Out

A +Voltage B -Ground

Connector Type Pick-up Part Number: 4.5050 Wlre Lead Pick-up Part Number: 4.5050L Connector Part Number: MS3106-10SL-4S



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CE

4.302T800 Magnetic Speed Sensor High Temperature

Product Description

Electronic Data Devices' high temperature magnetic pick-ups are suited for adverse temperature conditions.

Specifications

DC-Coil: Resistance/Inductance:

As tabulated in product

details below.

Magnetization:

Standard: 900 GAUSS, typ. Low Mag: 300 GAUSS, typ.

Temperature Range:

8HT: -450° to $+850^{\circ}$ F

 $(-270^{\circ} \text{ to } +458^{\circ} \text{ C})$

Pole Piece:

Flush and extended are available.

Construction:

303/304 Stainless Steel, Blindshell CF (closed face) design.

Solid Ceramic Encapsulation

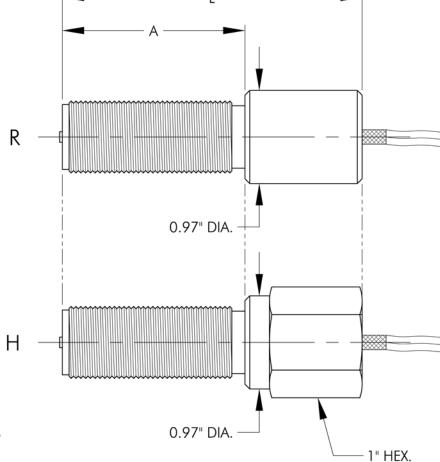
Mica-Glass Insulated Lead Wires, 22AWG

Application:

For gear pitch range of 24 DP or coarser depending on pole piece.

Options

For different length, material construction, configuration, special pole piece, thread size, hermetically sealed, precision custom magnetization, please contact factory.



Part Number	4.302T800, R or H
Lead Wires	L 36"
Thread	3/4 - 20 UNEF
Thread Length (A)	1.9" (46 mm)
Shell Length (L)	3.12" (79 mm)
Coil Resistance	160 Ohms
(Inductance)	(140 mH)
Pole Diameter	0.106"
Pole Length	0.020"