absolute 2-1-81 12-4-79 40 ROTOS SHAFTS WILL NOT BE MODIFIED

February 1, 1980

3/8" SHAFTS

UNI-DIRECTIONAL AND BI-DIRECTIONAL, PHOTOELECTRIC, ZERO SPEED ROTOPULSER®

ECONOMICAL, INDUSTRIAL DUTY, AND ACCURATE FOR A WIDE RANGE OF APPLICATIONS

GENERAL DESCRIPTION

Dynapar Series 40 Rotopulser is an economical, rugged, general purpose optical rotary transducer that generates an accurate pulse output proportional to shaft rotation. It was specifically designed to adequately handle a wide range of industrial applications at a cost that makes wide application economically feasible. In addition, the 40 Rotopulser line has been defined by a series of model numbers that eases selection of the "right" transducer for each application. The Series 40 Rotopulser is available in two basic types:

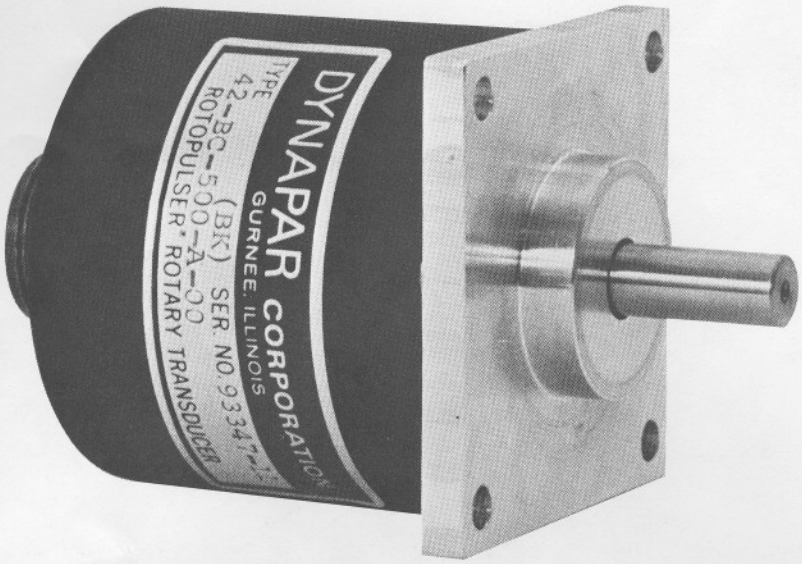
Type 41: a single output device for uni-directional applications such as displacement and length measurement in a single direction and rate and ratio measurement when applied with the correct counter, indicator, or control.

Type 42: a dual output device for bi-directional application where movement can occur in either direction and therefore must be added or subtracted for accurate control. Typical applications include strip length measurement, cut-to-length, and numerical control feedback.

FEATURES

Significant standard features include:

- Rugged enough for industrial duty.
  - Formed metal enclosure.
  - Two ball bearings.
  - 0.375 inch (9.525mm) machined stainless steel shaft.
- Good resolution: Up to 625 counts per revolution.
- Wide selection of resolutions available as standard.
- LED light source for long-term reliability and trouble-free operation.
- Built-in low impedance, single ended/differential output amplifier for driving long lines.
- High current output switches from line-to-line for current sourcing and sinking.
- Operation from either 5 Vdc or 12 Vdc power supply depending on model selected.

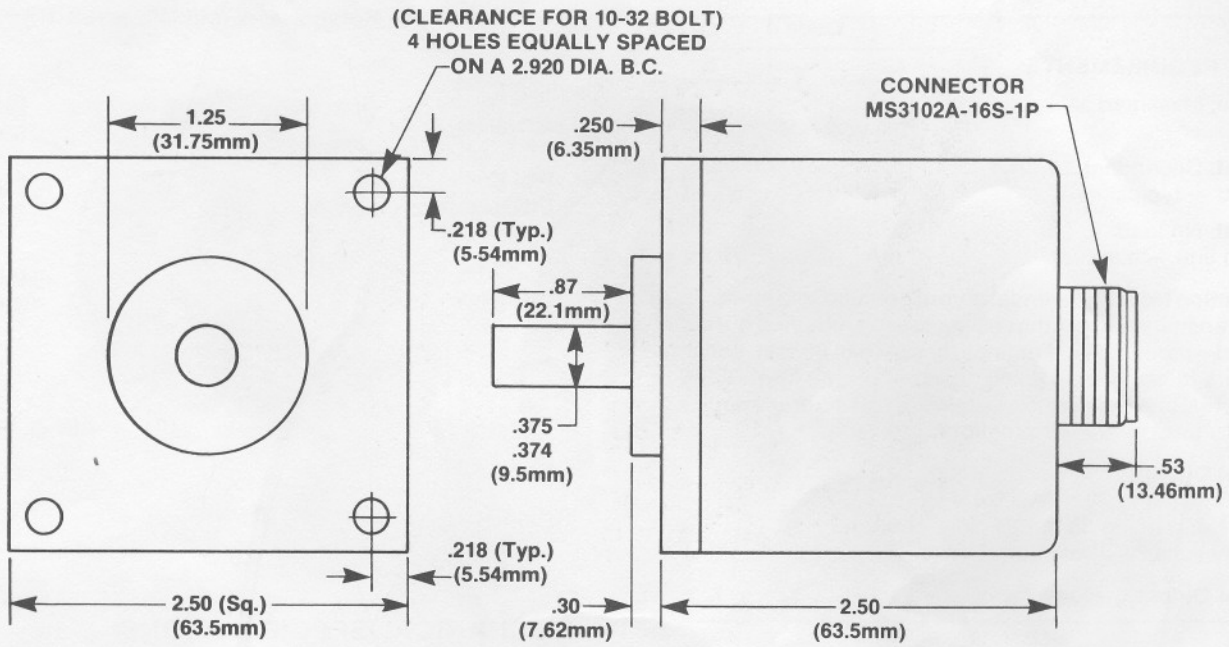


ACTUAL SIZE

ORDER INFORMATION

When ordering, please specify:

1. A complete model number by filling in the blanks to meet your application requirements. For example: 41-BA-001-A0 is a unidirectional, full differential output Rotopulser with 1 count per revolution and an MS connector.
2. Accessories, if required, should be listed. See accessory listing and pricing in Accessory Section 845.



DIMENSIONS

ORDER FORM

	Type	Electrical Output	Input Voltage	Counts per Revolution			Connector	Specials
MODEL NUMBER	4		B				A	O
CODE	1	2	3	4	5		6	7

Code 2: TYPE

1 - Unidirectional
2 - Bidirectional

Code 3: ELECTRICAL OUTPUT

B - Full Differential
NOTE: Although full differential output is available on all units, all units may be used for single ended output without affecting normal operation.

Code 4: INPUT VOLTAGE

A - +5 ± 10% Vdc
B - +12 ± 20% Vdc

C = 5-15 Vdc

Code 5: COUNTS PER REVOLUTION

Fill in actual count/revolution desired:

STANDARD COUNTS AVAILABLE

001	002	005	010	012
015	020	045	050	060
064	072	090	100	120
125	150	180	192	200
240	250	256	300	360
375	390	400	450	500
512	530	600	625	

Code 6: CONNECTOR

A - MS Connector (7-pin)

Code 7: SPECIALS

0 - None

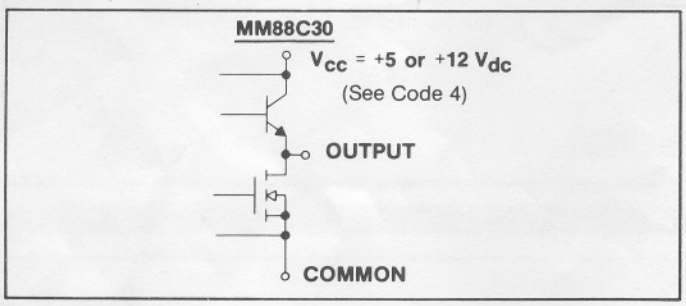
ELECTRICAL SPECIFICATIONS

INPUT REQUIREMENTS:	Code 4 A	Code 4 B
Voltage: Measured at Rotopulser	+5 ± 10% Vdc	+12 ± 20% Vdc
Current: Dependent on load — typical:	50 mA	50 mA
Current: No load, normal line — max:	70 mA	70 mA

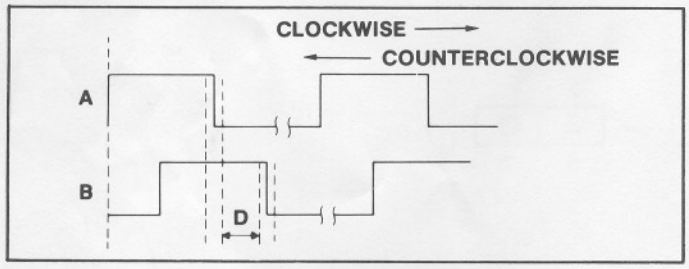
Application Note: Differential output permits Rotopulser signals to be transmitted over longer distances by reducing the effect of common-mode noise. For lines longer than 80 feet, consideration should be given to using, for example, an MM74C909 as a differential line receiver. See device manufacturer's application notes for proper line terminations.

Typical Output:
Logic 0: Sinking 22 mA @ 0.4 V
Logic 1: Sourcing 80 mA @ *V_{CC} −1.6 V
*Supply volts (V_{CC}) minus 1.6 volts.

Typical Output Circuit



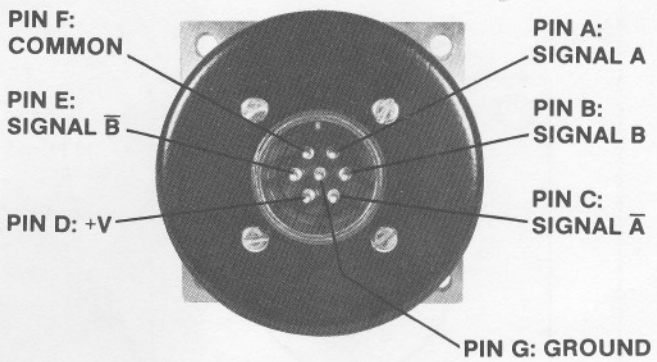
Electrical Output



Notes:
1. For single channel Rotopulsers (uni-directional), maximum out-of-position transition is 12.5%.
2. Minimum free path between any A and B transition (Distance D) will not be less than 7% of one full cycle of signal A. This includes effects of jitter and phase and symmetry shifts.

Electrical Connections:

MS connector on Rotopulser is (MS3102A-16S-1P):



Mating MS connector: MS3106A-16S-1S.

MECHANICAL SPECIFICATIONS

Weight: Standard Housing ..... 12.5 oz.

Speed Range ..... 0 to 3,000 RPM or 32 kHz
Maximum Output Frequency
Output Frequency = counts/rev x rev/sec

Operating Ambient Temperature ..... +32° to 130° F
(0° to +54° C)

Caution: Do not connect Rotopulser shaft to drive shafts whose operating temperature rises above 130° F (54° C).

Load Limits:
Maximum radial and axial load limit ..... 13 lbs. overhung

Load specifications include steady state and transient loads.

Inertia: 30 gm-cm² typical.

Torque: 1.5 oz.-inch max.

For further information or assistance with your application, call your local Dynapar representative or:

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Dynapar Corporation
1300 Skokie Highway
Suite 103A
Gurnee, IL 60031
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