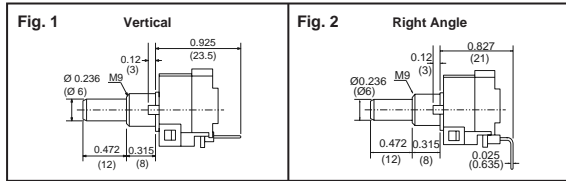




Optical Encoders

- Long life • High resolution • Metal shaft • Digital output



Power: 5VDC @ 50mA Life: 2.5 million cycles min.
Cycles/Rev.: 50/75/100/128/200 Output: TTL compatible

All models are quadrature (dual channel), rugged and may be panel or pc board mounted.
Maximum 300 RPM for integral applications; 1kHz max frequency response.

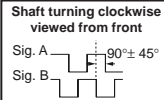
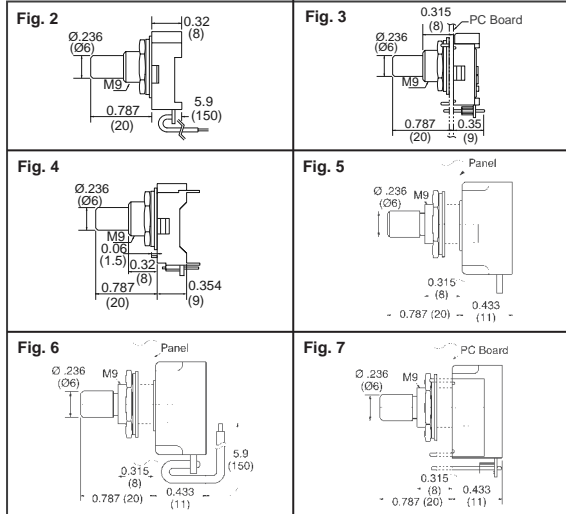


Fig.	CPR	Digi-Key Part No.	Price Each 1	10	Iwatsu Part No.
1	50	102-1001-ND	39.85	27.90	EC202A050A-2TD
2	50	102-1002-ND	39.85	27.90	EC202A050A-2SD
1	75	102-1003-ND	39.85	27.90	EC202A075A-2TD
2	75	102-1004-ND	39.85	27.90	EC202A075A-2SD
1	100	102-1005-ND	39.85	27.90	EC202A100A-2TD
2	100	102-1006-ND	39.85	27.90	EC202A100A-2SD
1	128	102-1007-ND	39.85	27.90	EC202A128A-2TD
2	128	102-1008-ND	39.85	27.90	EC202A128A-2SD
1	200	102-1009-ND	59.85	49.95	EC202C200A-2TD
2	200	102-1010-ND	59.85	49.95	EC202C200A-2SD



G Optical Encoders

- Smallest in the world
- Lowest current draw
- Extremely economical



Power: 5VDC @ 8mA Life: 1.0 million cycles min. Cycles/Rev.: 25 Output: TTL compatible
Body Size: .709" x .965" (18.01mm x 24.51mm)

Fig.	CPR	Detent	Digi-Key Part No.	Price Each 1	10	Tosoku Part No.
1	25	N	102-1015-ND	30.00	21.00	RE20NS2520RA
1	25	Y	102-1016-ND	30.00	21.00	RE20NS2520RA
2	25	N	102-1011-ND	34.15	23.90	RE20NC2520RA
2	25	Y	102-1012-ND	34.15	23.90	RE20NC2520RA
3	25	N	102-1013-ND	30.00	21.00	RE20NF2520RA
3	25	Y	102-1014-ND	30.00	21.00	RE20NF2520RA
4	25	N	102-1017-ND	30.00	21.00	RE20NV2520RA
4	25	Y	102-1018-ND	30.00	21.00	RE20NV2520RA
5	25	Y	102-1021-ND	42.30	38.55	RE21NS2520R
6	25	Y	102-1019-ND	48.10	43.80	RE21NC2520R
7	25	Y	102-1020-ND	42.30	38.55	RE21NF2520R

CLAROSTAT Optical Rotary Encoders

Series: 600, 601H, 601V

Electrical Specifications: Description: The Series 600 and 601 controls are manually operated, rotary, optical encoders that output two square waves in quadrature at a rate of 128 pulses per channel per revolution as a standard with other resolutions down to 60 pulses available. The outputs are TTL compatible. The variation by series is the terminal configuration, with the Model 600 having (4) cable leads, and the Model 601 having (4) pin leads and internal resistors. **Input Power:** 4 volts DC $\pm 5\%$ @ 30 MA maximum plus external requirements. **Output Rate:** 128 pulses/revolution per channel-standard. **Channels:** Two separate output channels in quadrature. $90^\circ \pm 45^\circ$. **Output**

Voltage: High level voltage: 2.4 volts min. with 10K Ω load to ground. Low level voltage: .4 volt maximum

Environmental Characteristics: Operating Temp.: -20°C to 65°C. **Mechanical Characteristics:** Shaft Rotation: Continuous in either direction, 300 RPM max.

Terminals: P/C Type: .025" (.64mm) by 0.12" (3.05mm) thick brass, gold plated to facilitate soldering. **Cable Type:** Four lead ribbon cable, color-coded, with .050" (1.27mm) spacing. 28 AWG stranded copper wire, .039" (.99mm) diameter. **Strength:** Terminals withstand 2 lb. push and pull and a 90° bend.

Block Diagram
One Channel Output

Output Waveform
 $\pm 90^\circ \pm 45^\circ$ Phase Error

Term#	Color	Function
1	Red	5VDC $\pm 5\%$ @ 30 MA max.
2	Yellow	A Out
3	Green	Ground
4	Orange	B Out

Model 600 - Cable Style

Model 601 - PC Terminal (Horizontal)

Model 601 - PC Terminal (Vertical)

Description	Digi-Key Part No.	Price Each	Clarostat Part No.
Cable Version	600CS-ND	46.14	600EN-128-CBL
Horizontal Version	601HCS-ND	45.51	600EN-128-B66
Vertical PC Version	601VCS-ND	45.09	600EN-128-C24

CTS Mechanical Rotary Encoders Series 288

Features: Miniature 16mm style. Low cost. Metal shaft. **Specifications:** • Power Rating: .1W • Operating Temp.: -25°C to 100°C • Rotational Life: 10K cycles • Contact Resistance: 5000 Ω static closed circuit maximum and 1 M Ω open circuit maximum • Continuous rotation

Fig. 1 - Binary Switching Codes

1A

1B - Vertical Mount with Switch

1C - Horizontal Mount with Switch

Fig. 2 - Gray Switching Code

Fig.	Description	Digi-Key Part No.	Price Each 1	10	50	100	CTS Part No.
1A	2 Bit Non-Detented 16 Position	CT3001-ND	2.58	2.40	2.00	1.80	288T232R161A1
1A	2 Bit Detented 16 Position	CT3002-ND	2.58	2.40	2.00	1.80	288T232R161A2
1B	2 Bit Binary w/Switch, Vertical, 16 Pos.	CT2999-ND	5.42	5.04	4.19	3.78	288V232R161B2
1C	2 Bit Binary w/Switch, Horizontal, 16 Pos.	CT3000-ND	5.42	5.04	4.19	3.78	288X232R161B2
2	4 Bit Non-Detented 16 Position	CT3003-ND	3.50	3.26	2.71	2.45	288T232R162A1