

# ROTAPULS

Incremental encoders

series

I65 • IT65



I65



IT65

## ENVIRONMENTAL SPECIFICATIONS

|                              |                                                                                                                                                                                      |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Shock:                       | 100 g, 6 ms (acc. to MIL STD 202F)                                                                                                                                                   |
| Vibrations:                  | 10 g, 5-2000 Hz (acc. to MIL STD 202F)                                                                                                                                               |
| Operating temperature range: | -20°C +70°C (-4°F +158°F)                                                                                                                                                            |
| Storage temperature range:   | -20°C +80°C (-4°F +176°F)<br>(98% R.H. without condensation)                                                                                                                         |
| Protection:                  | IP65                                                                                                                                                                                 |
| Options:                     | <ul style="list-style-type: none"> <li>• Operating temperature range: -40°C +100°C (-40°F +212°F)</li> <li>• IP66 Protection shaft end (torque 2,5 Ncm and 3000 rpm max.)</li> </ul> |

## MECHANICAL SPECIFICATIONS

|                                   |                                                                                          |
|-----------------------------------|------------------------------------------------------------------------------------------|
| Dimensions:                       | see drawing                                                                              |
| Shaft:                            | Ø 6, 8, 9.52, 10, 12 mm                                                                  |
| Shaft loading (axial and radial): | 100 N max.                                                                               |
| Shaft rotational speed:           | 6000 rpm max.                                                                            |
| Starting torque at 20°C:          | ≤ 1,5 Ncm (typical)                                                                      |
| Moment of inertia:                | ~ 50 gcm <sup>2</sup>                                                                    |
| Bearings life:                    | 400x10 <sup>6</sup> rev. min.<br>(10 <sup>9</sup> rev. min. with 20 N shaft loading max) |
| Weight:                           | ~ 0,3 kg (10,6 oz)                                                                       |

## ELECTRICAL SPECIFICATIONS

|                               |                                                                                                                                                                                                                                                                                                                              |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| STD pulse rate:               | 2-4-5-6-10-12-15-16-18-20-24-25-30-35-36-39                                                                                                                                                                                                                                                                                  |
| (other PPR upon request)      | 40-45-50-60-64-70-80-90-100-120-122<br>125-127-142-150-180-200-216-236-240<br>250-254-256-267-270-300-314-360-375<br>400-410-433-435-471-500-512-600-625<br>628-635-720-750-784-800-875-900-946<br>1000-1024-1068-1099-1200-1250-1270<br>1440-1500-1800-2000-2048-2250-2400-2500<br>3000-3600-4000-4096-5000-6000-9000-10000 |
| Power supply:                 | +5V±5%, +10V +30V, +5V +30V                                                                                                                                                                                                                                                                                                  |
| Output circuits:              | NPN o.c., PNP o.c., Push-Pull, Line Driver, PP/LD                                                                                                                                                                                                                                                                            |
| Output current (per channel): | 40 mA max.                                                                                                                                                                                                                                                                                                                   |
| Output frequency:             | 100 kHz max.                                                                                                                                                                                                                                                                                                                 |
| Input current:                | 70 mA max.                                                                                                                                                                                                                                                                                                                   |
| Protection:                   | against inversion of polarity (except +5V version)<br>outputs are protected against short-circuit (except Line Driver version)                                                                                                                                                                                               |
| Optoelectronic life:          | 100.000 hrs min.                                                                                                                                                                                                                                                                                                             |
| Option:                       | • Output frequency up to 300 kHz max.                                                                                                                                                                                                                                                                                        |

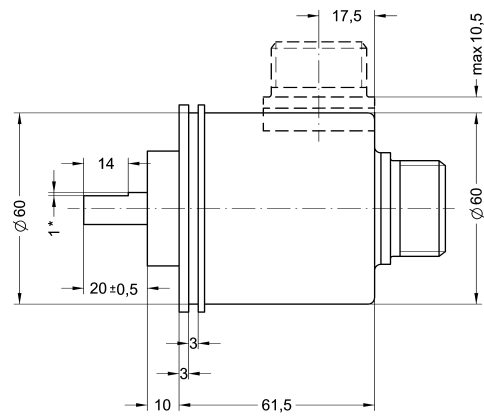
## MATERIALS

|               |                               |
|---------------|-------------------------------|
| Flange:       | non corroding                 |
| Housing:      | non corroding                 |
| Bearings:     | ABEC 5                        |
| Shaft:        | stainless steel, non-magnetic |
| Light source: | GaAl diodes                   |

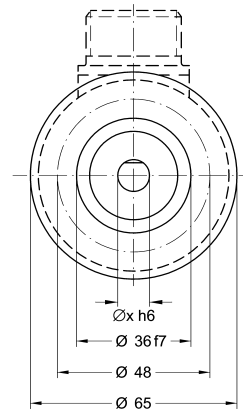
## ACCESSORIES

|          |                             |
|----------|-----------------------------|
| E7MLS:   | 7 pin MIL mating connector  |
| E10MLS:  | 10 pin MIL mating connector |
| PAN/PGF: | flexible couplings          |
| LKM-386: | fixing clamps               |

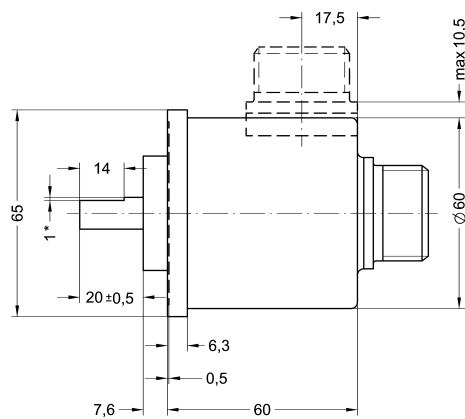
Specifications subject to changes without prior notice



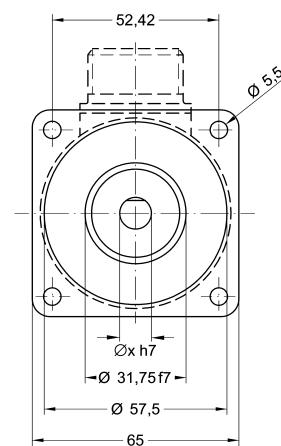
\* = 0,5mm with  $\varnothing 6$  shaft



I65



\* = 0,5mm with  $\varnothing 6$  shaft



IT65

## ORDERING CODE

|                              |                                                                                                                                           |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| XXXX - X - XXXX              | X                                                                                                                                         |
| SERIES                       | I65 - IT65                                                                                                                                |
| OUTPUT CIRCUITS              | NPN o.c. <b>N</b><br>PNP o.c. <b>P</b><br>Push-Pull <b>Y</b><br>Line Driver AD26LS31 or eqv. <b>L</b><br>PP/LD universal circuit <b>H</b> |
| PULSE RATE (PPR)             | See electrical specifications                                                                                                             |
| OUTPUT SIGNALS CONFIGURATION | Bidirectional <b>B</b><br>Bidirectional with index pulse <b>Z</b>                                                                         |

|                                  |                                                                                                                                                                           |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X X X X                          | SHAFT DIAMETER                                                                                                                                                            |
|                                  | B 6 mm<br>C 8 mm<br>D 9.52 mm / 3/8"<br>E 10 mm<br>F 12 mm                                                                                                                |
| ELECTRICAL CONNECTIONS           | N Normal output<br>C Complementary outputs<br>F 5 wires cable, 1m. (3.3 ft)<br>D 7 pin IP65 MIL connector<br>U 8 wires cable, 1m. (3.3 ft)<br>P 10 pin IP65 MIL connector |
| SUPPLY VOLTAGE VS OUTPUT CIRCUIT | +5V $\pm$ 5% (L output circuit)<br>+10V $\div$ +30V (N, P and Y output circuits)<br>+5V $\div$ +30V (PP/LD universal circuit)                                             |

## ADDITIONAL CODE (indicate only if necessary)

|           |                                                                             |
|-----------|-----------------------------------------------------------------------------|
| X X X X X | Cable length on request<br>Lx Ex.: L4 = 4 m (13.2 ft)<br>L7 = 7 m (23.0 ft) |
| K         | Operating temperature range: -40°C + 100°C (-40°F + 212°F)                  |
| W         | Output frequency up to 300 kHz                                              |
| Q         | IP66 Protection shaft side                                                  |
| R         | Side mount cable or connector                                               |