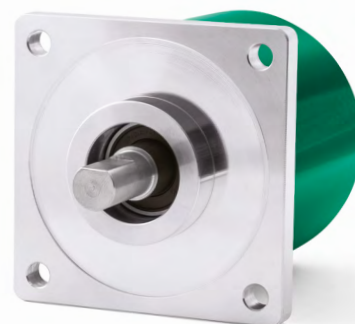


- US standard optical encoders
- Robust die-cast housing
- MIL standard connector
- Single turn up to 18 bit (262144 cpr) and multi turn up to 16x14 bit (65536 x 16384)
- High degree of protection, IP66
- BCD output code on request



AST6 • AMT6

### ENVIRONMENTAL SPECIFICATIONS

|                              |                                                                                                                                                    |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Shock:                       | 250 g, 6 ms acc. to CEI EN 60068-2-27                                                                                                              |
| Vibrations:                  | 10 g, 5-2000 Hz acc. to CEI EN 60068-2-6                                                                                                           |
| Protection:                  | IP66, IP65 shaft side                                                                                                                              |
| Operating temperature range: | -25°C +85°C (-13°F +185°F)                                                                                                                         |
| Storage temperature range:   | -40°C +100°C (-40°F +212°F)<br>(98% R.H. without condensation)                                                                                     |
| Options:                     | <ul style="list-style-type: none"> <li>• Operating temperature range: -40°C +100°C (-40°F +212°F)</li> <li>• IP66 protection shaft side</li> </ul> |

### MECHANICAL SPECIFICATIONS

|                                |                                                                                           |
|--------------------------------|-------------------------------------------------------------------------------------------|
| Dimensions:                    | see drawing                                                                               |
| Shaft diameter:                | Ø 6, 8, 9.52, 10, 12 mm                                                                   |
| Shaft loading (axial, radial): | 100 N max.                                                                                |
| Shaft rotational speed:        | 6000 rpm max.                                                                             |
| Starting torque (at 20°C):     | ≤ 1,5 Ncm (typical)                                                                       |
| Bearings life:                 | 400x10 <sup>6</sup> rev. min. (10 <sup>9</sup> rev. min. with shaft loading of 20 N max.) |
| Electrical connections:        | M23 or MIL plug, MIL 32 pin inline plug or cable output 1 m (3.3 ft)                      |
| Weight:                        | ~ 400 g (14,1 oz)                                                                         |
| Option:                        | • additional cable                                                                        |

### ELECTRICAL SPECIFICATIONS

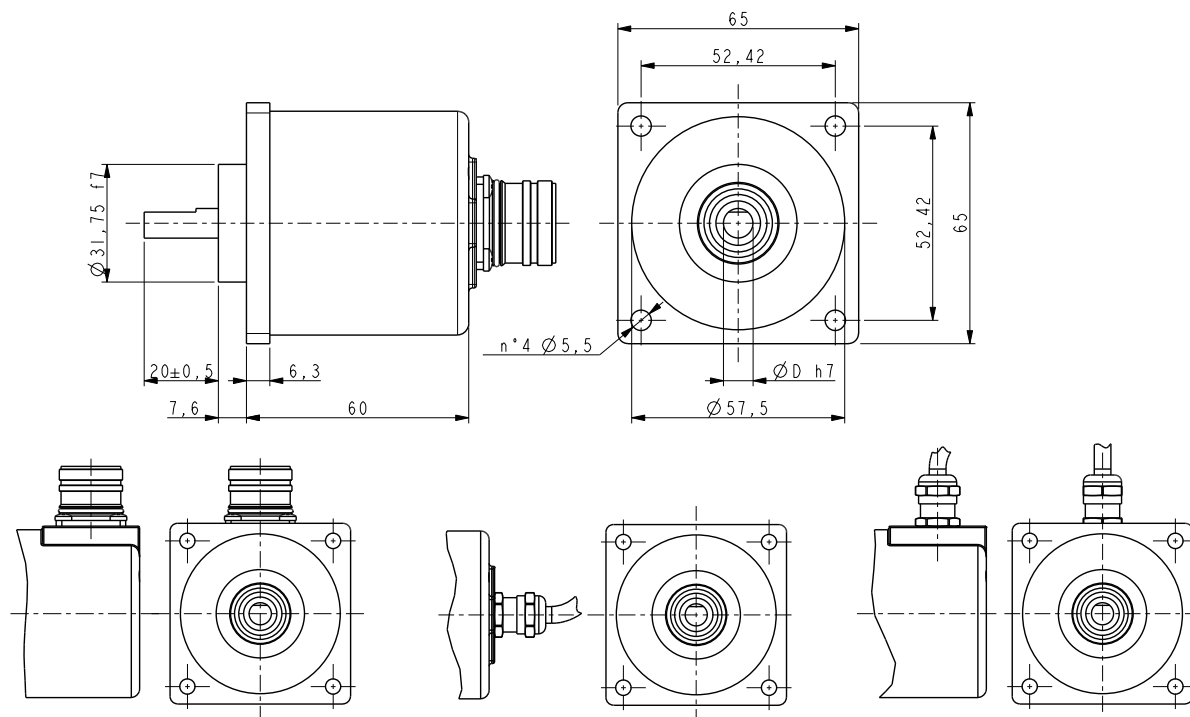
|                      |                                                                                                                       |
|----------------------|-----------------------------------------------------------------------------------------------------------------------|
| Resolution:          | single turn = 1024, 4096, 8192, 16384, 65536, 262144 cpr<br>multi turn = 4096, 16384 turns                            |
| Accuracy:            | ± 0,04°                                                                                                               |
| Output circuits:     | SSI (RS422), Bit parallel Push-Pull, NPN                                                                              |
| Output code:         | Gray, Binary                                                                                                          |
| Counting frequency:  | > 150 kHz                                                                                                             |
| Power supply:        | +7,5Vdc ÷ 34Vdc                                                                                                       |
| Power consumption:   | SSI: 1 W max., Bit parallel: 1,7 W max.                                                                               |
| Protection:          | against inversion of polarity and short-circuit                                                                       |
| EMC:                 | electro-magnetic immunity, according to: EN 61000-4-2<br>EN 61000-4-4                                                 |
| Optoelectronic life: | > 100.000 h                                                                                                           |
| Functions:           | <ul style="list-style-type: none"> <li>• counting direction (input)</li> <li>• Zero setting/Preset (input)</li> </ul> |

### MATERIALS

|           |                                            |
|-----------|--------------------------------------------|
| Flange:   | anticorodal, UNI EN AW-6082                |
| Housing:  | zamac die cast                             |
| Bearings: | ABEC 5                                     |
| Shaft:    | stainless steel, non magnetic, UNI EN 4305 |

### ACCESSORIES

|                       |                                |
|-----------------------|--------------------------------|
| EPFL121H:             | M23 12 pin connector           |
| EPFL171H:             | M23 17 pin connector           |
| E10MLS:               | MIL 10 pin connector           |
| E19MLS:               | MIL 19 pin connector           |
| E32MLS:               | MIL 32 pin connector           |
| PAN/PGF:              | flexible couplings             |
| EC-CR17F-LK-A20-xxx:  | cordset xx m, M23 17 pin conn. |
| EC-CR12F-S28-T12-xxx: | cordset xx m, M23 12 pin conn. |



AST6

## Order code - Bit parallel output

|      |              |   |            |   |           |   |          |          |   |          |             |              |
|------|--------------|---|------------|---|-----------|---|----------|----------|---|----------|-------------|--------------|
| AST6 | XX-XX<br>(a) | - | XXX<br>(b) | - | XX<br>(c) | - | X<br>(d) | X<br>(e) | - | X<br>(f) | XXXX<br>(g) | /Sxxx<br>(h) |
|------|--------------|---|------------|---|-----------|---|----------|----------|---|----------|-------------|--------------|

**(a) RESOLUTION  
(BIT SINGLETURN-BIT MULTITURN)**

10-00 = 1024 cpr  
12-00 = 4096 cpr  
13-00 = 8192 cpr

**(b) OUTPUT CIRCUIT/POWER SUPPLY**

BY2 = Binary, Push-Pull, +7,5Vdc +34Vdc  
GY2 = Gray, Push-Pull, +7,5Vdc +34Vdc  
BN2 = Binary, NPN, +7,5Vdc +34Vdc  
GN2 = Gray, NPN, +7,5Vdc +34Vdc  
(BCD on request)

**(c) SHAFT DIAMETER**

06 = 6 mm  
08 = 8 mm  
P9 = 9.52mm / 3/8"  
10 = 10 mm  
12 = 12 mm

**(d) PROTECTION**

P = IP66, IP65 shaft side  
Q = IP66 shaft side

**(e) OPERATING TEMP. RANGE**

T = -25°C +85°C (-13°F +185°F)  
K = -40°C +100°C (-40°F +212°F)

**(f) CONNECTION POSITION**

A = axial  
R = radial

**(g) CONNECTION TYPE & CABLE LENGTH**

L010 = cable output 1 m (standard)  
Lxx0 = cable out. x m (max. length 10m)  
L100 = cable output 10 m  
M7 = M23 17 pin plug  
X = MIL 19 pin plug  
Z010 = 1 m cable + DSub 15 pin plug

**(h) CUSTOM VERSION**

## Order code - SSI output

|      |              |   |            |   |           |   |          |          |   |          |             |              |
|------|--------------|---|------------|---|-----------|---|----------|----------|---|----------|-------------|--------------|
| AST6 | XX-XX<br>(a) | - | XXX<br>(b) | - | XX<br>(c) | - | X<br>(d) | X<br>(e) | - | X<br>(f) | XXXX<br>(g) | /Sxxx<br>(h) |
|------|--------------|---|------------|---|-----------|---|----------|----------|---|----------|-------------|--------------|

**(a) RESOLUTION  
(BIT SINGLETURN-BIT MULTITURN)**

10-00 = 1024 cpr  
12-00 = 4096 cpr  
13-00 = 8192 cpr  
14-00 = 16384 cpr  
16-00 = 65536 cpr  
18-00 = 262144 cpr

**(b) OUTPUT CIRCUIT/POWER SUPPLY**

BS2 = Binary, SSI tree format, +7,5Vdc +34Vdc  
BA2 = Binary, SSI LSB aligned, +7,5Vdc +34Vdc  
GS2 = Gray, SSI tree format, +7,5Vdc +34Vdc  
GA2 = Gray, SSI LSB aligned, +7,5Vdc +34Vdc  
G02 = Gray, SSI LSB aligned + 1024 PPR  
Line Driver, +7,5Vdc +34Vdc

**(c) SHAFT DIAMETER**

06 = 6 mm  
08 = 8 mm  
P9 = 9.52mm / 3/8"  
10 = 10 mm  
12 = 12 mm

**(d) PROTECTION**

P = IP66, IP65 shaft side  
Q = IP66 shaft side

**(e) OPERATING TEMP. RANGE**

T = -25°C +85°C (-13°F +185°F)  
K = -40°C +100°C (-40°F +212°F)

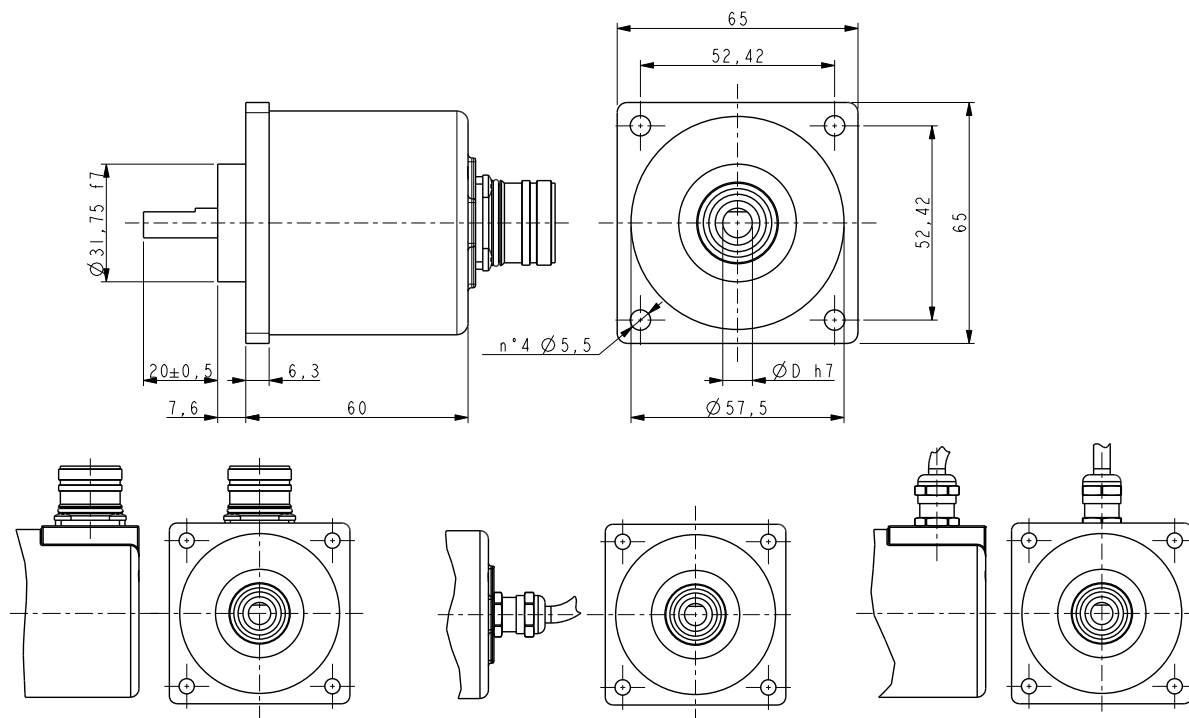
**(f) CONNECTION POSITION**

A = axial  
R = radial

**(g) CONNECTION TYPE & CABLE LENGTH**

L010 = cable output 1 m (standard)  
Lxx0 = cable out. x m (max. length 10m)  
L100 = cable output 10 m  
P = MIL 10 pin plug  
M2 = M23 12 pin plug

**(h) CUSTOM VERSION**



AMT6

## Order code - Bit parallel output

| AMT6 | XX-XX | - | XXX | - | XX  | - | X   | X   | - | X   | XXXX | /Sxxx |
|------|-------|---|-----|---|-----|---|-----|-----|---|-----|------|-------|
|      | (a)   |   | (b) |   | (c) |   | (d) | (e) |   | (f) | (g)  | (h)   |

**(a) RESOLUTION****(BIT SINGLETURN-BIT MULTITURN)**

10-12 = 10 x 12 bit (1024 cpr x 4096 turns)

12-12 = 12 x 12 bit (4096 cpr x 4096 turns)

13-12 = 13 x 12 bit (8192 cpr x 4096 turns)

**(b) OUTPUT CIRCUIT/POWER SUPPLY**

BY2 = Binary, Push-Pull, +7,5Vdc +34Vdc

GY2 = Gray, Push-Pull, +7,5Vdc +34Vdc

BN2 = Binary, NPN, +7,5Vdc +34Vdc

GN2 = Gray, NPN, +7,5Vdc +34Vdc

BCD on request

**(c) SHAFT DIAMETER**

06 = 6 mm

08 = 8 mm

P9 = 9.52mm / 3/8"

10 = 10 mm

12 = 12 mm

**(d) PROTECTION**

P = IP66, IP65 shaft side

Q = IP66 shaft side

**(e) OPERATING TEMP. RANGE**

T = -25°C +85°C (-13°F +185°F)

K = -40°C +100°C (-40°F +212°F)

**(f) CONNECTION POSITION**

A = axial

R = radial

**(g) CONNECTION TYPE & CABLE LENGTH**

L010 = cable output 1 m (standard)

Lxx0 = cable out. x m (max. length 10m)

L100 = cable output 10 m

V = MIL 32 pin plug

**(h) CUSTOM VERSION**

## Order code - SSI output

| AMT6 | XX  | - | XX  | - | XXX | - | XX  | - | X   | X   | - | X   | XXXX | /Sxxx |
|------|-----|---|-----|---|-----|---|-----|---|-----|-----|---|-----|------|-------|
|      | (a) |   | (b) |   | (c) |   | (d) |   | (e) | (f) |   | (g) | (h)  | (i)   |

**(a) BIT SINGLETURN**

10 = 1024 cpr

12 = 4096 cpr

13 = 8192 cpr

16 = 65536 cpr

**(b) BIT MULTITURN**

12 = 4096 turns

14 = 16384 turns

(only with SSI LSB aligned)

**(c) OUTPUT CIRCUIT/POWER SUPPLY**

BS2 = Binary, SSI tree format, +7,5Vdc +34Vdc

BA2 = Binary, SSI LSB aligned, +7,5Vdc +34Vdc

GS2 = Gray, SSI tree format, +7,5Vdc +34Vdc

GA2 = Gray, SSI LSB aligned, +7,5Vdc +34Vdc

**(d) SHAFT DIAMETER**

06 = 6 mm

08 = 8 mm

P9 = 9.52mm / 3/8"

10 = 10 mm

12 = 12 mm

**(e) PROTECTION**

P = IP66, IP65 shaft side

Q = IP66 shaft side

**(f) OPERATING TEMP. RANGE**

T = -25°C +85°C (-13°F +185°F)

K = -40°C +100°C (-40°F +212°F)

**(g) CONNECTION POSITION**

A = axial

R = radial

**(h) CONNECTION TYPE & CABLE LENGTH**

L010 = cable output 1 m (standard)

Lxx0 = cable out. x m (max. length 10m)

L100 = cable output 10 m

P = MIL 10 pin plug

M2 = M23 12 pin plug

**(i) CUSTOM VERSION**

| Document release | Date      | Description    |
|------------------|-----------|----------------|
| 1.0              | 5.08.2025 | New order code |