# Avtron AV6A Absolute Encoder

## AV6A Optical Rotary Absolute Encoders, 58mm flange, solid shaft

## Tough and Compact!

ı Industry Standard 58mm Size
ı Up to 30 Bit Resolution
ı Unbreakable Optical Disk
ı Singleturn or Multiturn
ı IP66 Rating
ı Superior Bearings and Seals
ı No Batteries
ı -40°C to +85°C Operation
ı 2 Year No-Hassle Warranty

## AV6A

AV6A absolute rotary encoders fit industry standard 58mm flanges, yet are superior to ordinary absolute encoders. Also available: HS6A hollow shaft models, AV6M magnetic absolute encoders, AV30 severe-duty absolute magnetic encoders with 58mm, 2.5", and 85mm flange mounting.
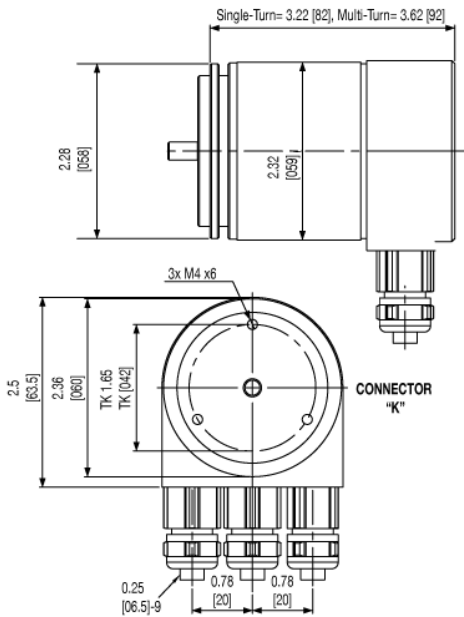
AV6A encoders have superior shaft seals and bearings that stay sealed to keep contaminants out, despite temperature cycles or liquid sprays. Our encoder seals are protected by mechanical barriers to prevent flexing or failure. Avtron's superior bearings permit much larger side and axial loads.

Many competitive optical encoder designs risk sensor damage from any vibration or shock. Some designs even use thin glass disks in "industrial" products! Avtron uses only unbreakable disks.

The AV6A offers a broad range of communication options, from parallel output and SSI to the latest Profibus and Ethernet standards.

Our optical AV6A encoders use superior sensor, disk, bearing, and seal technology to give top performance in industrial conditions. Select an Avtron AV6A today!

## OUTLINE DRAWING



Single-Turn= 3.22 [82], Multi-Turn= 3.62 [92]

2.28 [058]
2.32 [059]

3x M4 x6
2.5 [63.5]
2.36 [060]
TK 1.65 [042]
TK [042]

CONNECTOR "K"

0.25 [06.5]-9    0.78 [20]    0.78 [20]

## MORE AV6A ADVANTAGES

l Stainless steel shaft standard
l Optional all-stainless construction
l More than 2X the axial and side load capability of the competition
l Ultra-long-life internal gearbox
l Software-settable zero point for SSI and parallel output
l Optional factory-programmable cam limits
l Optional 5V operation
l Protected against reverse power wiring
l Profibus DP & ProfiNet Support for Class 1 & 2 & DPV2 Isochronous (ProfiDrive)

## AV6A SPECIFICATIONS

**Operating Power:** Volts: 10 - 30 VDC
**Current:** 230mA at 10V, 100mA at 24V maximum*
**Output Formats:** Ethernet/IP*, Modbus TCP*, Profinet*, Powerlink, Profibus, CANOpen, CANSafe, DeviceNet, SSI, Parallel
**Accuracy:** +/-0.02° (+/-1 arc-min)
**Shaft Loading:** axial 9lbs [40N], radial 25lbs [110N]
**Temperature:** -40° to 85°C*
**Environment:** IP66**
**Vibration:** 10G, 10-1000Hz
**Shock:** 30G, 11mS duration*
**Weight:** 1.21lb [550g]; stainless option 2.7lb [1200g]

*(Ethernet versions require 400mA @ 10V or 160mA @ 24V)

Check out our website for more detailed specifications, drawings, and installation instructions. www.avtronencoders.com

**with standard recommended seals

## SELECTION GUIDE

### AV6A PART NUMBERS AND AVAILABLE OPTIONS

| Model | Bus | Flange | Shaft Size | Turns/bits | PPR/bits per turn | Connector | Connector Exit | Output | IP Rating | Special Option |
|---|---|---|---|---|---|---|---|---|---|---|
| AV6A | C- CANOpen<br>D- DeviceNet<br>F- CANSafe<br>K- POWERLINK<br>L- Parallel<br>M- ModbusTCP Ethernet<br>N- Profinet IO<br>P- Profibus DP<br>R- Ethernet/IP<br>S- SSI | 1- 58mm "servo/clamp" flange, 36mm male pilot, 3X M3, 3X M4 at 48mm<br><br>2- 58mm "synchro" flange, 50mm male pilot, 3X M4 at 42mm<br><br>4- 2.5" square flange w/1.25" male pilot | B- 3/8" dia. x 5/8" w/flat<br>C- 10mm dia. x 20mm w/flat<br>T- 6mm dia., x 10mm, no flat | X- 0/0- single turn<br>A- 16/4**<br>D- 128/7**<br>E- 256/8**<br>2- 4096/12<br>4- 16384/14 | E- 256/8**<br>F- 512/9**<br>0- 1024/10**<br>2- 4096/12<br>3- 8192/13<br>4- 16384/14<br>6- 65536/16<br><br>**Parallel Bus Only | A- 1xM12/5 pin<br>B- 2xM12/5 pin<br>C- 3xM12 4/4/5 or 4/4/4 pins<br>D- 2xM12/4/5 pin<br>E- M12/8 pin<br>F- M23/12 pin<br>G- M27/26pin<br>J- 2x cable entry<br>K- 3x cable entry<br>M- M23/8pin Hengstler<br>N- M23/8pin Stegmann<br>Q- M23/8pin Kubler<br>W- Cable, 1m | A- side/radial<br>E- end/axial | 1- Binary<br>2- Gray | X- None, IP54*<br>A- IP66 shaft seals<br>S- IP66 seals, stainless housing | 000- none<br>9xx- special cable length xx=length *0.3m |

### FLANGE COMPATIBILITY

| Flange | Shaft | IP/Sealing |
|---|---|---|
| 1 | C | X*, A, S |
| 2 | C, T | X*, A, S |
| 4 | B | X*, A, S |

*X - no seal option not recommended

### STANDARD CONNECTORS & OUTPUT FORMATS

| Bus | Code | Connectors | Output |
|---|---|---|---|
| CANOpen | C | A, B, C, J, K, W | 1 |
| DeviceNet | D | A, W | 1 |
| CANSafe | F | K | 1 |
| POWERLINK | K | C | 1 |
| Parallel | L | G, W | 1, 2 |
| ModbusTCP | M | D | 1 |
| Profinet | N | C | 1 |
| Profibus DP | P | C, J, K | 1 |
| EtherNet/IP | R | C | 1 |
| SSI | S | E, F, W | 1, 2 |