

SERIES AX70/AX71

ACURO™ brand

Optical Absolute Encoder

Key Features

- Up to 17 bit of Singleturn, 12 bit of True Multiturn Absolute Positioning
- ATEX Certification for Explosion Proof Requirements
- Stainless Steel or Aluminum Housing
- Multiple Communication Options



E Ex d II C T6/T4



SPECIFICATIONS

ELECTRICAL - DeviceNet / CANopen

Parameter	DeviceNet	CANopen
Supply voltage:	DC 10-30 V	DC 10-30 V
Current consumption ST/MT:	max.250 mA	max.250 mA
Profile/ Protocol:	DeviceNet according to Rev. 2.0, programmable encoder	CANopen according DS 301 with encoder profile DSP 406
Output code:	Binary	Binary
Resolution Singleturn:	10 - 14 Bit	10 - 16 Bit
Resolution Multiturn:	12 Bit	12 Bit
Baud rate:	set via Bus	set via Bus
Bus termination:	External resistor	External resistor
MAC-ID:	set via Bus	–
Node ID:	–	set via Bus
Integrated special functions:	–	Speed, acceleration, round axis, limit values
Programmable:	Resolution, Preset, Direction	Resolution, Preset, Limits value, Direction
Connection:	Cable axial	Cable axial

ELECTRICAL CONNECTIONS - DeviceNet / CANopen

Color	DeviceNet	CANopen
Yellow	CAN in+	CAN in+
Green	CAN in -	CAN in -
Pink	CAN out+	CAN out+
Grey	CAN out -	CAN out -
Blue	DRAIN	CAN GND in
Black	DRAIN	CAN GND out
White	UB in	UB in
Brown	0 V in	0 V in
Screen	Screen connected to encoder housing	

ELECTRICAL - SSI/ SSI-P

Parameter	SSI	SSI-P
Supply voltage	DC 10-30 V	DC 10-30 V
Max. current w/o load	220 mA (ST), 250 mA (MT)	250 mA (ST /MT)
Resolution singleturn	10 -17 Bit	10 -17 Bit
Resolution multiturn	12 Bit	12 Bit
Output code	Binary, Gray	Binary, Gray
Drives	Clock and Data /RS422	Clock and Data /RS422
Control inputs	Direction	Direction, Preset 1, Preset 2
Alarm output	Alarm bit (SSI Option)	Alarm bit
Parametrization	N/A	Resolution, Code type, Direction, Warning, Output format, Alarm, Preset values

ELECTRICAL CONNECTIONS — SSI-P

Wire Color	Pin No.	SSI-P Function
White 0.14 mm	6	RS232 RxD
Brown 0.14 mm	5	RS232 TxD
Green	10	Clock
Yellow	9	Clock
Gey	8	Data
Pink	7	Data
Blue	3	Direction
Black	4	0 V signal output
Red	1	Preset 1
Violet	2	Preset 2
Brown 0.5 mm	11	0 V supply voltage
White 0.5 mm	12	DC 10 ...30 V
Screen	—	Screen connected to encoder housing

Note: Parameterization is programmable with WIN SSI software

SSI / SSI-P RECOMMENDED DATA
TRANSFER RATE (bei SSI)

Cable length	Frequency
<50 m	<400 kHz
<100 m	<300 kHz
<200 m	<200 kHz
<400 m	<100 kHz

The max. data transfer rate depends on the cable length.

For Clock /Clock and Data /Data please use twisted pairs. Use shielded cable.

ELECTRICAL CONNECTIONS — SSI

Wire Color	Pin No.	SSI Function
White 0.14 mm	12	Vcc 10 to 30VDC
Brown 0.14 mm	11	0 V Gnd.
Green	10	Clock
Yellow	9	Clock
Gey	8	Data
Pink	7	Data
Blue	3	Direction
Black	4	0 V Gnd.

ELECTRICAL - Profibus

Parameter	Profibus
Supply voltage	10-30 VDC
Max. current w/o load	220 mA (ST), 250 mA (MT)
Resolution singleturn	10 -14 Bit
Resolution multiturn	12 Bit
Output code	Binary
Profile/protocol	Profibus DP with encoder profile class C2 (parameterizable)
Parametrization	Resolution, Preset, Direction
Integrated special functions	Speed, Acceleration, Operating time
Baud rate	Automatically set within a range of 9.6 Kbaud through 12 Mbaud
Device address	Set via Bus
Bus termination resistor	External mounting

ELECTRICAL CONNECTIONS — Profibus

Wire Color	Profibus Function
Yellow	B in
Green	A in
Pink	B out
Grey	A out
Blue	GND1 (M5V ¹)
Brown	VCC1 (P5V ¹)
White 0.5 mm	DC 10 - 30 V
Brown 0.5 mm	0 V
Screen	Connected to encoder housing

¹ used for power supply for an external bus termination resistor

MECHANICAL - All Types

Shaft diameter: 10 mm (Solid shaft)

Mounting: Clamping flange

Max. Shaft load: Axial= 40 N; Radial= 100 N

Max. shaft speed: T4= 10 000 rpm; T6= 6000 rpm

Torque: ≤1 Ncm

Moment of inertia: approx. 20 gcm²

Material shaft: Stainless Steel

Material housing: AX 70= Aluminum;

AX 71= Stainless Steel

Weight: AX 70= approx. 1.4 kg; AX 71= approx. 4.8 kg

Connection: Cable, axial

ENVIRONMENTAL - All Types

Protection class, shaft (EN 60529)¹: T4= IP64 or IP67; T6= IP64

Protection class, housing (EN 60529): T4= IP65 or IP67;

T6= IP65 (IP64 for CANopen or DeviceNet)

Vibration resistance (DIN EN 60068-2-6): 100 m/s² (10 to 500 Hz)

Shock resistance (DIN EN 60068-2-27): 1000 m/s² (6 ms)

Operating temperature: T4= -40°C to +60°C;

T6= -40°C to +40°C

Storage temperature: -25°C to +85°C

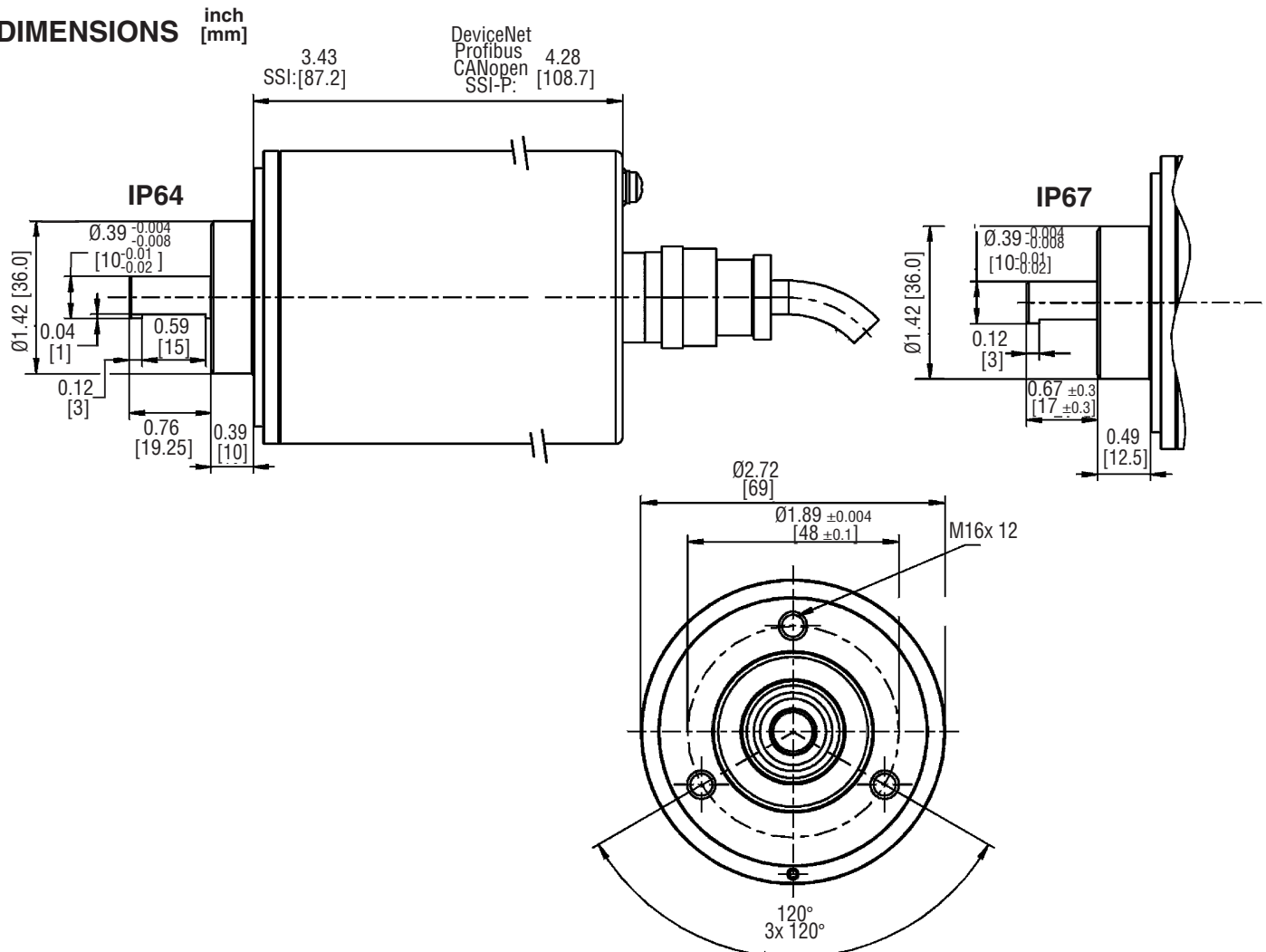
¹ No dust explosion-proof (D) for IP64

T6 = Highest permissible surface temperature +85°C (max. speed = 6000 /min⁻¹)
T4 = Highest permissible surface temperature +130°C (max. speed = 10,000 /min⁻¹)

To order, complete the model number with code numbers from the table below:

Code 1: Model	Code 2: Resolution	Code 3: Voltage	Code 4: Mounting	Code 5: Protection Class	Code 6: Shaft Size	Code 7: Interface	Code 8: Connection	Code 9: Cable Length
Ordering Information								
AX70								
Acuro Series AX70 Heavy Duty Absolute encoder, Aluminum Housing AX71 Stainless Steel Housing	SSI Only <u>Single Turn</u> 0010 0012 0013 0014 0017 <u>Multi Turn</u> 1212 1213 1214 1217	CAN, Profibus, DeviceNet <u>Single Turn</u> 0014 <u>Multi Turn</u> 1214	A 5 VDC E 10-30VDC K Clamping Flange	4 IP64 7 IP67	2 10mm	SB SSI-Binary SG SSI-Gray SP SSI-Programmable DP Profibus DP VD DeviceNet CL CAN-L2 OL CAN-Open	A Axial Cable B Radial Cable	F0 5m K0 10m P0 15m U0 20m V0 25m

DIMENSIONS inch [mm]





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