AX 700

ATEX/IECEx Flameproof Shaft Encoder

CHARACTERISTICS

- *Directive 2014/34/EU*
- *Heavy Duty Design IP66/67*
- *Blind Hole Hollow Shaft from 6 to 14 mm*
- *Shaft Diameter from 6 to 20 mm*
- *Resolutions from 1 to 13 Bit Parallel (Gray or Binary)*
- *Resolutions Single-/Multiturn SSI (max. 16 Bit/43Bit)*
- *CanOpen Output with Binary Code*
- *Analog Current Output*
- *Supply Voltage 5 VDC, 8 to 30VDC or 10 to 30 VDC*

MECHANICAL SPECIFICATIONS

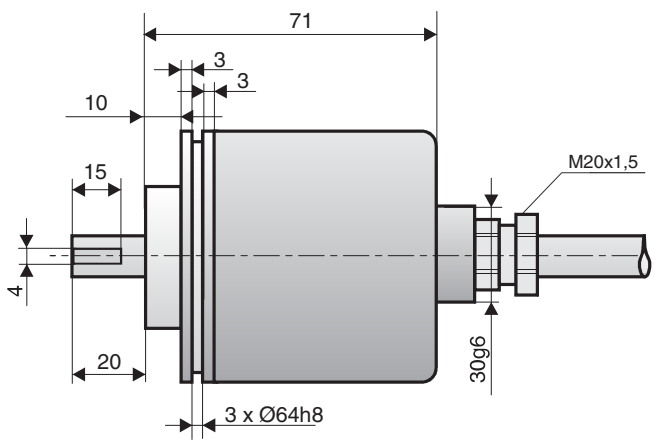
Encoder Lid	Stainless Steel
Encoder Body	Stainless Steel
Encoder Shaft	Stainless Steel
max. Speed	max. 3000 RPM
Starting Torque *(at 25°C)*	> 0.4 Nm
max. Loading on Shaft	Axial 60 N, Radial 50 N
Protection Rate *(DIN EN 60529)*	IP 66/67
Ambient Temperatur Range	-20° C to +65° C T6
	-20° C to +115° C T4
	-20° C to +55° C T70 *(Dust)*
Weight	ca. 1.3 kg

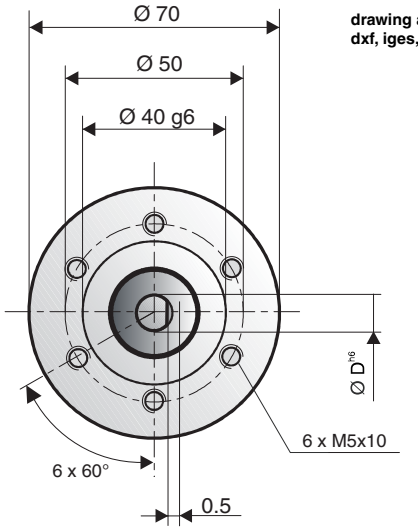
ATEX/IECEx APPROVAL SPECIFICATIONS

Protection Concept	Flameproof “d“, Dust protection “t“
Marking	Ex I M2 Ex db I Mb
	Ex II 2 G Ex db IIC T4 Gb
	Ex II 2 G Ex db IIC T6 Gb
	Ex II 2 D Ex tb IIIC T70° C Db
Standards	EN IEC 60079-0
	EN IEC 60079-1
	EN IEC 60079-31

DIMENSIONS

Dimensions in mm





drawing available as: dxf, iges, step, sld

D = Shaft Diameter (see ordering code)

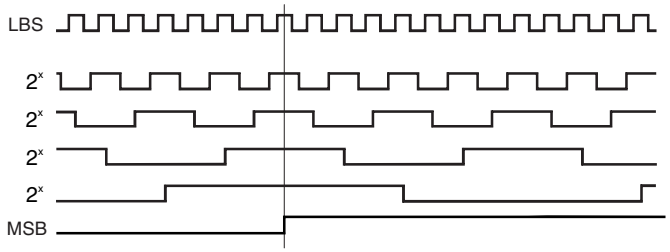
AX 700

ATEX/IECEx Flameproof Shaft Encoder

ELECTRICAL SPECIFICATIONS PARALLEL OUTPUT

Supply Voltage	5 VDC , 8 - 30 VDC
Current Consumption	max. 100 mA@30 VDC
Output Circuit	HTL, TTL
LSB Frequency	max. 100 kHz
Signal Level (high)	Vcc - 0.7 Volt
Signal Level (low)	max. 0.25 Volt
Direction Setting DIR <->	DIR = NC→cw, DIR = GND→ ccw
Short Circuit Protection	100%
Reverse polarity protection per channel	100%
Cable	Flame Retardant, Chemically Resistant

SIGNALS PARALLEL OUTPUT



Parallel Gray Code shown - Parallel Binary code also available

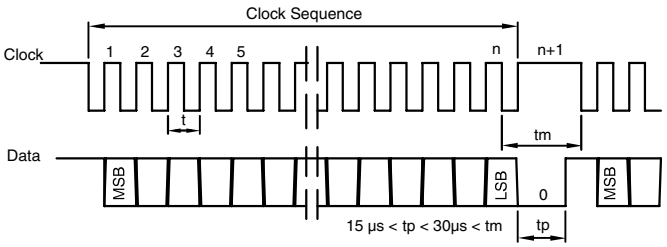
CONNECTIONS PARALLEL OUTPUT

Function	Cable Code	Function	Cable Code
GND	white	2^6	black
Vcc	brown	2^7	violet
2^0	green	2^8	grey/pink
2^1	yellow	2^9	red/blue
2^2	grey	2^{10}	white/green
2^3	pink	2^{11}	brown/green
2^4	blue	2^{12}	white/yellow
2^5	red	DIR <->	yellow/brown

ELECTRICAL SPECIFICATIONS SSI OUTPUT

Supply Voltage	5 VDC , 10 - 30 VDC
Current Consumption *(no load)*	max. 100 mA@30 VDC
Output Circuit	RS485/RS422 compatible
Pulse frequency	max. 500 kHz
Direction Setting DIR <->	DIR = GND→cw, DIR = Vcc→ ccw
Preset/Reset Setting	Set: Preset = Vcc for 2s
	Rset: Preset = GND
Short Circuit Protection	100%
Reverse polarity protection per channel	100%
Cable	Flame Retardant, Chemically Resistant

SIGNALS SSI OUTPUT



SSI Single Transmission Protocol

CONNECTIONS SSI OUTPUT

Function	Cable Code
GND	white
Vcc	brown
SSI Clock +	green
SSI Clock -	yellow
SSI Data +	grey
SSI Data -	pink
Reset/Preset [*1]	blue
Direction Setting/DIR	red

Notes:

[*1] Vcc for 2 seconds to reset. Connect to GND for normal operation.

AX 700

ATEX/IECEx Flameproof Shaft Encoder

ELECTRICAL SPECIFICATIONS CANopen OUTPUT

Supply Voltage	10 - 30 VDC
Current Consumption (no load)	max. 100 mA@30 VDC
Output Circuit	CANopen
Resolution	14 Bit Single-/18 Bit Multiturn
Short Circuit Protection	100%
Code	Binary

ELECTRICAL SPECIFICATIONS ANALOG OUTPUT

Supply Voltage	15 - 30 VDC
Current Consumption (no load)	max. 100 mA@30 VDC
Current Output Circuit	0- 24 mA
Accuracy	1.0°

CONNECTIONS CANOpen OUTPUT

Function	Cable Code
GND	white
UB	brown
CAN_H	green
CAN_L	yellow
CAN_GND	grey

CONNECTIONS ANALOG OUTPUT

Function	Cable Code
Prog+	white
GND	brown
UB	green
I_OUT	yellow
Prog-	grey
UB	green
I_GND	blue
Preset	pink

ORDERING CODE

AX	700	-							-						-	Sxxx *2	-	
a	b		c	d	e	f	g	h		i = Resolution						j		k

Resolutions from 1 to 13 Bit Parallel
Resolutions Single-/Multiturn SSI (max. 16 Bit/43Bit)

a **Group Function**
AX = ATEX/IECEx Flameproof Absolute

b **Basic Series Number**
700

c **Shaft Diameter D**
selectable from 6 to 20 mm *(solid shaft)*
selectable from 6 to 14 mm *(blind hole)*
08 = 8 mm, 10 = 10 mm, 12 = 12 mm

d **Mechanical Option**
0 = None
Y = Blind Hole Hollow Shaft

e **Connection Type**
0 = 2 m Cable , C = 10 m Cable

f **Connection Location**
A = Axial

g **Output Signals**
E = Binary Code Parallel
F = Gray Code Parallel
H = 4 to 20 mA Analog
J = Binary Code SSI
R = CANOpen
Y = Gray Code SSI

h **Output Circuit Type / Supply Voltage**
1 = Parallel / TTL 5 VDC
5 = Parallel / HTL 8 to 30 VDC
F = SSI / 5 VDC
G = SSI / 10 to 30 VDC
I = Analog / 15 to 30 VDC
Y = CANOpen / 10 to 30 VDC

i **Resolution**
1 up to 13 Bit for Single-Turn/Parallel/Analog
1 up to 16 x 1 up to 43 Bit for Multiturn

j **Special Option**
reserved for special option (see Notes)

j **Temperature Class (Ambient)**
T6 = -20°C to + 65 °C
T4 = -20°C to + 115 °C

Notes:

*2 Any special functions and design will be designated by a 4 digit code (Sxxx) at the end of the part number. Consult our Office for your region for further details. If this encoder does not fit your need please also consult us for help.