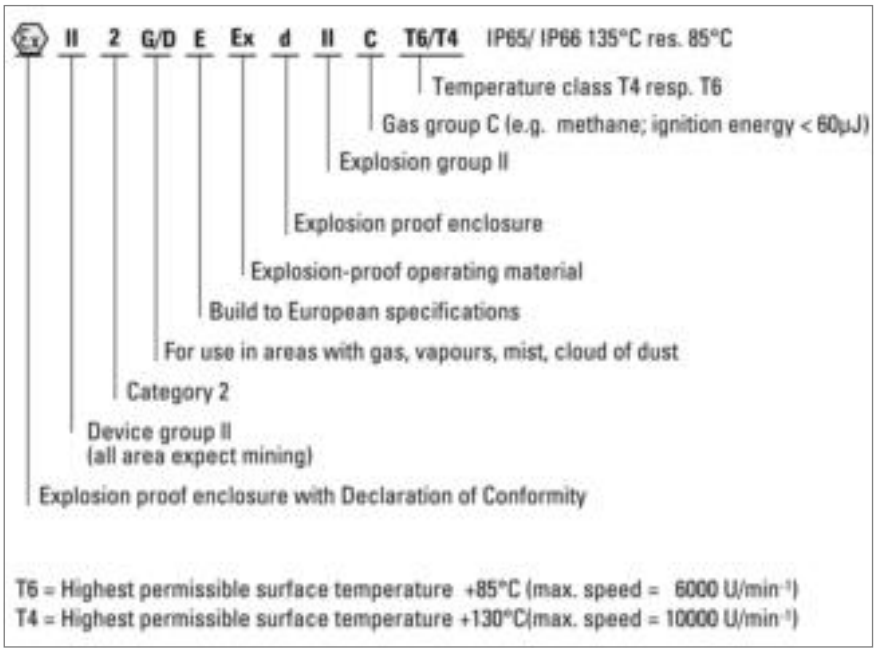
EEx Industrial Types

The absolute encoder line ACURO® and incremental encoder line "RI" are available with explosion proof enclosure "d" under AX70 or AX71 (stainless steel) for absolute encoders and RX70 or RX71 (stainless steel) for incremental encoders.

They are approved by PTB and documented via "Declaration of Conformity" to meet the the requirements of safety and health according to EN 50014 and EN 50018. Therefore it's usage is permitted in explosive areas, code „Ex II 2 G/D E Ex d II C T4/T6 IP65/ IP66 135°C resp. 85°C".

For applications under tough environmental conditions and food industry the stainless steel version AX71 and RX71 are available.



Examples of applications for explosion proof encoders:

- draw works
- other Oil field applications
- petro chemistry
- enamelling production line
- bottling machines
- mixers
- silo works

Incremental

RX 70 - Aluminium

RX 71 - Stainless steel

- Explosion proof class II according to EX II 2 G/D EEX d IIC T6/T4
- Highest working reliability
- Resolution up to 10000 ppr
- Stainless steel version RX71 available
- Applications: enamelling production line, surfacing machines, bottling machines, mixers, silo works

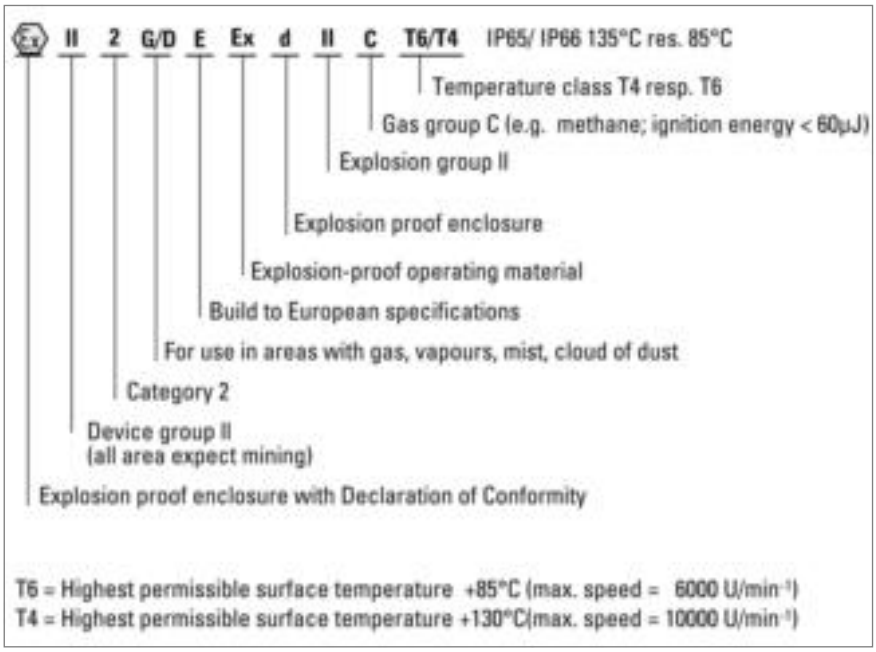
NUMBER OF PULSES

1 / 2 / 3 / 4 / 5 / 10 / 15 / 20 / 25 / 30 / 35 / 40 / 45 / 50 / 60 / 64 / 70 / 72 / 80 / 100 / 125 / 128 / 144 / 150 / 180 / 200 / 230 / 250 / 256 / 300 / 314 / 350 / 360 / 375 / 400 / 460 / 480 / 500 / 512 / 600 / 625 / 635 / 720 / 750 / 900 / 1000 / 1024 / 1200 / 1250 / 1500 / 1600 / 1800 / 2000 / 2048 / 2500 / 3000 / 3480 / 3600 / 3750 / 3968 / 4000 / 4096 / 4800 / 5000 / 5400 / 6000 / 7200 / 7680 / 8000 / 8192 / 9000 / 10000
Other number of pulses on request

EX-CLASSIFICATION

The incremental shaft encoder is available in explosion proof design with explosion proof enclosure "d" under RX 70 and RX 71 (stainless steel).
The PTB has assured with the Declaration of Conformity that the RX 70 / 71 meets the requirements of safety and health according to EN 50014 and EN 50018. Therefore it is approved in explosive areas, code "Ex II 2 G/D E Ex d II C T4/T6 IP65/ IP66 135°C resp. 85°C".
For applications under tough environmental conditions and food industry the stainless steel version RX 71 is available.

Incremental



TECHNICAL DATA
mechanical

Housing diameter	70 mm
Shaft diameter	10 mm (Solid shaft)
Flange (Mounting of housing)	Clamping flange
Protection class shaft input (EN 60529) [1]	T4: IP64 or IP67 T6: IP64
Protection class housing (EN 60529)	T4: IP65 or IP67 T6: IP65
Shaft load axial / radial	50 N / 100 N
Max. speed	T4: max. 10000 rpm T6: max. 6000 rpm
Torque	≤ 1 Ncm
Moment of inertia	approx. 20 gcm²
Vibration resistance (DIN EN 60068-2-6)	10 g = 100 m/s² (10 ... 2000 Hz)
Shock resistance (DIN EN 60068-2-27)	100 g = 1000 m/s² (6 ms)
Ambient temperature	T4: -25 °C ... +60 °C T6: -25 °C ... +40 °C
Storage temperature	-25 °C ... +85 °C
Material shaft	Stainless Steel
Material housing	RX 70TI: Aluminum RX 71TI: Stainless Steel
Weight	RX 70TI: approx. 1.4 kg RX 71TI: approx. 4.8 kg
Connection [2,3]	Cable, axial

[1] No dust explosion-proof certification for IP64
[2] Standard cable length: 5 m cable, other cable length on request
[3] Connection cable for fixed installation

Incremental

TECHNICAL DATA
electrical

General design	as per DIN VDE 0160, protection class III, contamination level 2, overvoltage class II
Supply voltage [1]	RS422 + Sense (T): DC 5 V ±10 % RS422 + Alarm (R): ± 10% DC 5 V or DC 10 - 30 V Push-pull (K), Push-pull antivalent (I): DC 10-30 V
Max. current w/o load	40 mA (DC 5 V), 60 mA (DC 10 V), 30 mA (DC 24 V)
Max. pulse frequency	RS422: 300 kHz Push-pull: 200 kHz
Standard output versions [2, 3]	RS422 + Alarm (R): A, B, N, $\overline{A}$, $\overline{B}$, $\overline{N}$, $\overline{Alarm}$ RS422 + Sense (T): A, B, N, $\overline{A}$, $\overline{B}$, $\overline{N}$, Sense Push-pull (K): A, B, N, $\overline{Alarm}$ Push-pull complementary (I): A, B, N, $\overline{A}$, $\overline{B}$, $\overline{N}$, $\overline{Alarm}$
Pulse width error	± max. 25° electrical
Number of pulses	1 ... 10 000
Output current	RS 422: ±30 mA Push-pull with short-circuit protection: 30 mA (DC 10 - 30 V)
Alarm output	NPN-O.C., max. 5 mA
Pulse shape	Square wave
Pulse duty factor	1:1

[1] Pole protection with supply voltage DC 10 - 30 V
[2] Output code "K" and "I": short-circuit-proof
[3] Output description and technical data see chapter "Technical basics"

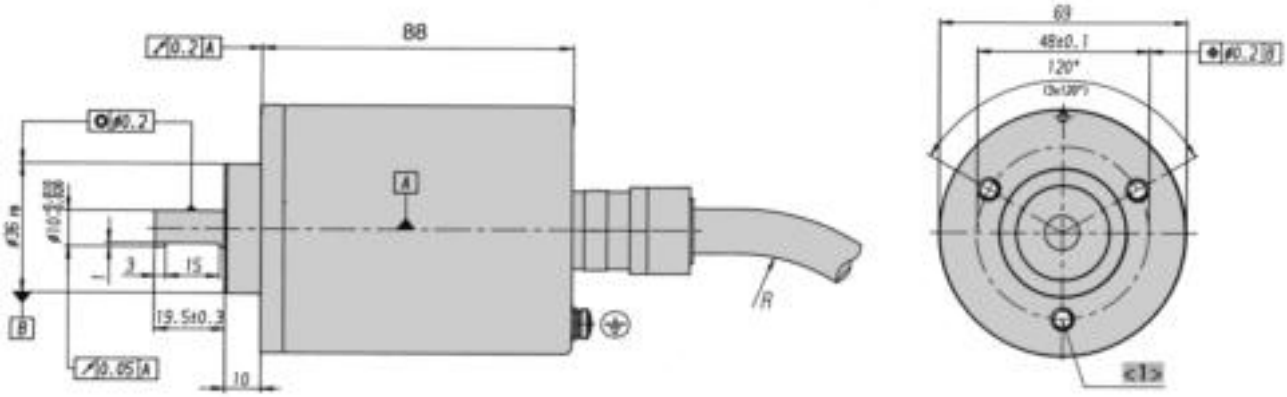
ELECTRICAL CONNECTIONS
Cable PVC

Cable Colour	Cable No.	Output RS 422+ Sense (T)	RS 422+ Alarm (R)	push-pull (K)	push-pull complementary (I)
brown/green	12	DC 5 V	DC 5 / 10 - 30 V	DC 10 - 30 V	DC 10 - 30 V
white/green	11	GND	GND	GND	GND
blue	10	Sense V_{CC}			
white	9	Sense GND			
brown	1	Channel A	Channel A	Channel A	Channel A
green	2	Channel $\overline{A}$	Channel $\overline{A}$		Channel $\overline{A}$
grey	3	Channel B	Channel B	Channel B	Channel B
pink	4	Channel$\overline{B}$	Channel$\overline{B}$		Channel$\overline{B}$
red	5	Channel N	Channel N	Channel N	Channel N
black	6	Channel $\overline{N}$	Channel $\overline{N}$		Channel $\overline{N}$
violett	7		$\overline{Alarm}$	$\overline{Alarm}$	$\overline{Alarm}$
screen			Cable screen connected to housing		
Screw terminal			for additional connection of an earth conductor		

Incremental

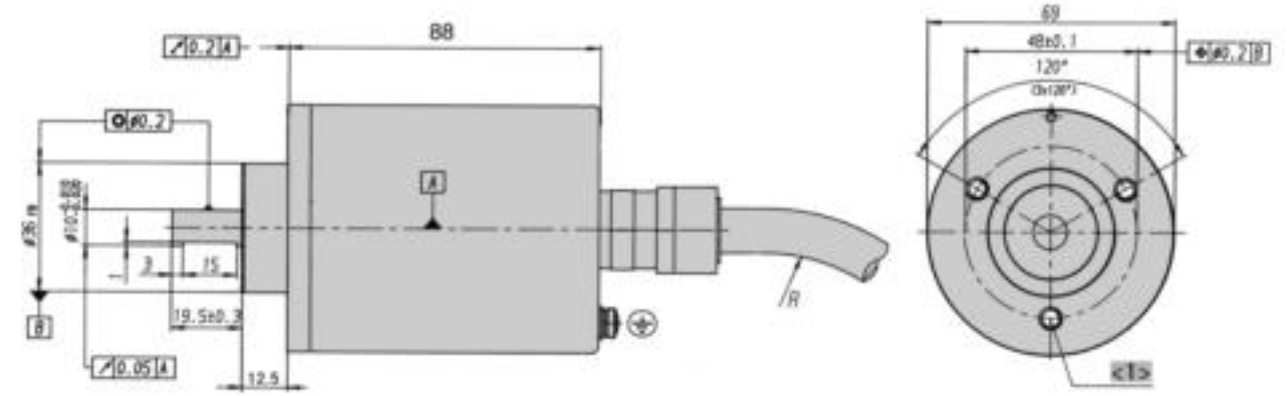
DIMENSIONED DRAWINGS

IP64



<1> mounting thread M6x12
Cable bending radius R for flexible installation ≥ 100 mm
Cable bending radius R for fixed installation ≥ 40 mm
Dimensions in mm

IP67



<1> mounting thread M6x12
Cable bending radius R for flexible installation ≥ 150 mm
Cable bending radius R for fixed installation ≥ 40 mm
Dimensions in mm

Incremental

ORDERING INFORMATION

Type	Model	Number of pulses	Supply voltage [1, 2]	Flange, Protection, Shaft [3]	Output	Connection
☐	☐	☐	☐	☐	☐	☐
RX70 **RX71** Stainless Steel	**TI** Incremental	**1 ... 10000**	**A** DC 5 V **E** DC 10 - 30 V	**K.42** Clamping, IP64, 10 mm **K.72** Clamping, IP67, 10 mm	**R** RS422 +Alarm **T** RS422 +Sense **K** Push-pull **I** Push-pull complementary	**E** TPE cable, axial

[1] DC 5 V: only with output "T", "R" available
[2] DC 10 - 30 V: only with output "K", "I", "R" available
[3] No dust explosion-proof certification (D) for IP64

ORDERING INFORMATION
Selection of cable length

Versions with cable outlet (connection A, B, E or F) are available with various lengths of cable. To order your desired cable length, please add the respective code to the end of your ordering code. Further cable lengths on request.

Code	Cable length
-F0 / without code	5 m
-K0	10 m
-P0	15 m
-U0	20 m
-V0	25 m

ACCESSORIES

see chapter "Accessories", starting page 322

Absolute SSI

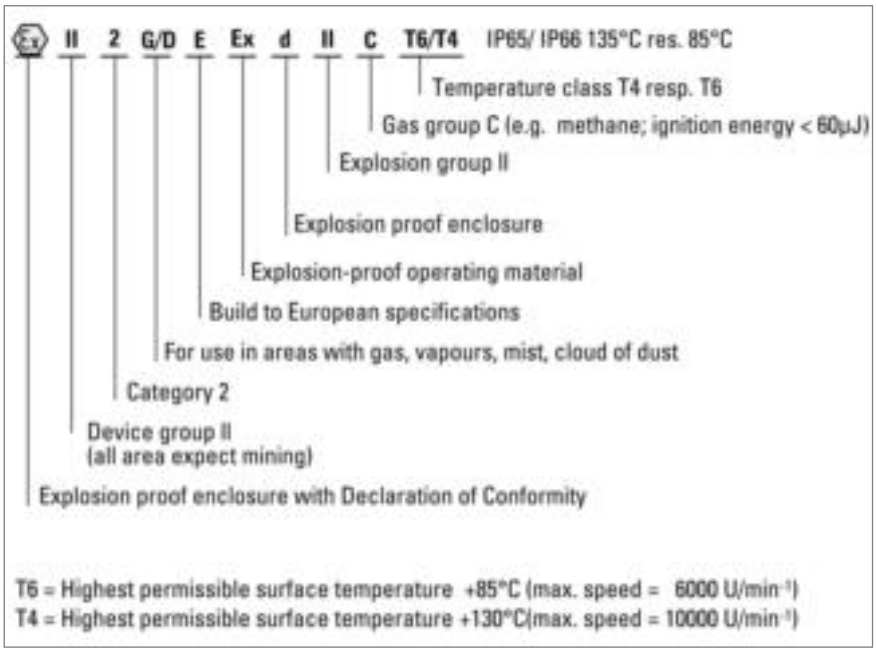
Version AX 70 - Aluminium

Version AX 71 - Stainless Steel

- ATEX certification for gas and dust explosion proof
- Same electrical performance as ACURO industry
- Protection class up to IP67
- Diameter only 70 mm
- Robust design
- Also available with stainless steel housing (AX 71 - SSI)
- Resolution up to 29 Bit (17 Bit ST, 12 Bit MT)
- Applications: enamelling production line, petro chemistry, bottling machines, mixers, silo works, mills

EX-CLASSIFICATION

The absolute shaft encoder line ACURO is available in explosion proof design with explosion proof enclosure "d" under AX 70 and AX 71 (stainless steel).
The PTB has assured with the Declaration of Conformity that the AX 70 / 71 meets the requirements of safety and health according to EN 50014 and EN 50018. Therefore it is approved in explosive areas, code "Ex II 2 G/D E Ex d II C T4/T6 IP65/ IP66 135°C resp. 85°C".
For applications under tough environmental conditions and food industry the stainless steel version AX 71 is available.



TECHNICAL DATA
mechanical

Housing diameter	70 mm
Shaft diameter	10 mm (Solid shaft)

Absolute SSI

TECHNICAL DATA
mechanical (continued)

Flange (Mounting of housing)	Clamping flange
Protection class shaft input (EN 60529) [1]	T4: IP64 or IP67 T6: IP64
Protection class housing (EN 60529)	T4: IP65 or IP67 T6: IP65
Shaft load axial / radial	40 N / 100 N
Max. speed	T4: max. 10 000 rpm T6: max. 6000 rpm
Torque	≤ 1 Ncm
Moment of inertia	approx. 20 gcm²
Vibration resistance (DIN EN 60068-2-6)	100 m/s² (10 ... 500 Hz)
Shock resistance (DIN EN 60068-2-27)	1000 m/s² (6 ms)
Ambient temperature	T4: -40 °C ... +60 °C T6: -40 °C ... +40 °C
Storage temperature	-25 °C ... +85 °C
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

[1] No dust explosion-proof (D) for IP64

TECHNICAL DATA
electrical

Supply voltage	DC 10-30 V
Max. current w/o load	220 mA (ST), 250 mA (MT)
Resolution singleturn	10 - 17 Bit
Resolution multiturn	12 Bit
Output code	Binary, Gray
Drives	Clock and Data / RS422
Control inputs	$\overline{\text{Direction}}$
Alarm output	Alarm bit (SSI Option)

RECOMMENDED DATA TRANSFER RATE
bei SSI

The max. data transfer rate depends on the cable length. For Clock / $\overline{\text{Clock}}$ and Data / $\overline{\text{Data}}$ please use twisted pairs. Use shielded cable.

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

Absolute SSI

ELECTRICAL CONNECTIONS
Cable

Colour	No.	SSI
white 0.5 mm	12	DC 10 ... 30 V
brown 0.5 mm	11	0 V supply voltage
green	10	$\overline{\text{Clock}}$
yellow	9	Clock
grey	8	$\overline{\text{Data}}$
pink	7	Data
blue	3	$\overline{\text{Direction}}$
black	4	0 V signal output

DIMENSIONED DRAWINGS

see chapter "Dimensioned drawings AX 70 / AX 71", starting page 253

ORDERING INFORMATION

Type	Resolution [1, 2, 3]	Supply voltage	Flange, Protection, Shaft [4, 5]	Interface	Connection
☐	☐	☐	☐	☐	☐
AX70 **AX71**	**0010** 10 Bit ST **0012** 12 Bit ST **0013** 13 Bit ST **0014** 14 Bit ST **0017** 17 Bit ST **0360** 360 increments ST **0720** 720 increments ST **1212** 12 Bit MT + 12 Bit ST **1213** 12 Bit MT + 13 Bit ST higher resolution on request	**E** DC 10 - 30 V	**K.42** Clamping, IP64, 10 mm **K.72** Clamping, IP67, 10 mm	**SB** SSI binary **SG** SSI Gray	**A** Cable, axial

[1] Resolution 360 increments ST with Offset 76 (value range 76...435)
[2] Resolution 720 increments ST with Offset 152 (value range 152...871)
[3] When resolution > 14 Bit: max. clock frequency 178´kHz
[4] Dust explosion-proof certification (D) only for IP67
[5] IP67 only with temperature class T4

ORDERING INFORMATION
Selection of cable length

Versions with cable outlet (connection A, B, E or F) are available with various lengths of cable. To order your desired cable length, please add the respective code to the end of your ordering code. Further cable lengths on request.

Code	Cable length
-F0 / without code	5 m
-K0	10 m
-P0	15 m
-U0	20 m
-V0	25 m

ACCESSORIES

see chapter "Accessories", starting page 322

Absolute Profibus

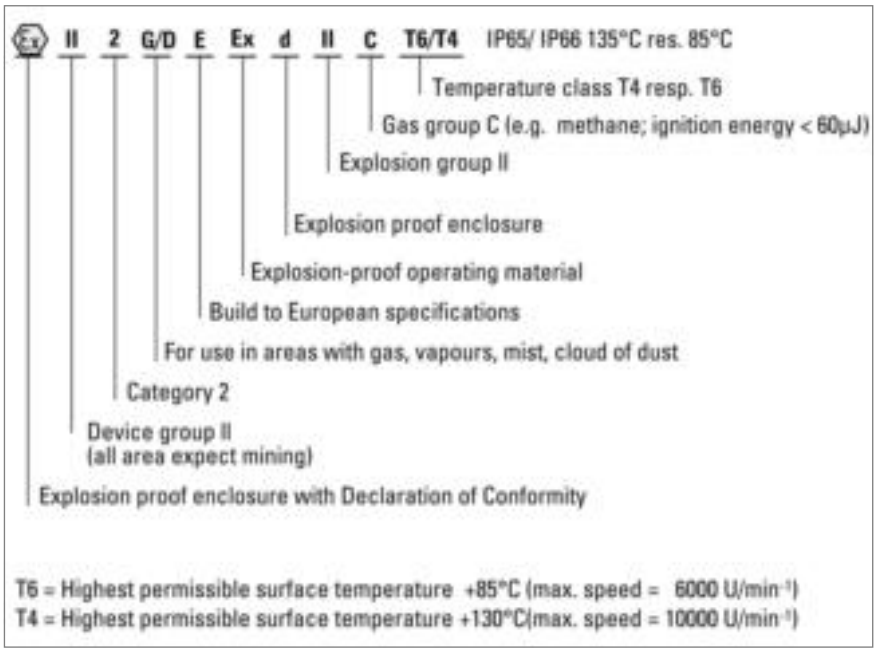
Version AX 70 - Aluminium

Version AX 71 - Stainless Steel

- ATEX certification for gas and dust explosion proof
- Same electrical performance as ACURO industry
- Protection class up to IP67
- Diameter only 70 mm
- Robust design
- Also available with stainless steel housing (AX 71 - Profibus)
- Resolution up to 26 Bit (14 Bit ST, 12 Bit MT)
- Applications: enamelling production line, petro chemistry, bottling machines, mixers, silo works, mills

EX-CLASSIFICATION

The absolute shaft encoder line ACURO is available in explosion proof design with explosion proof enclosure "d" under AX 70 and AX 71 (stainless steel).
The PTB has assured with the Declaration of Conformity that the AX 70 / 71 meets the requirements of safety and health according to EN 50014 and EN 50018. Therefore it is approved in explosive areas, code "Ex II 2 G/D E Ex d II C T4/T6 IP65/ IP66 135°C resp. 85°C".
For applications under tough environmental conditions and food industry the stainless steel version AX 71 is available.



TECHNICAL DATA
mechanical

Housing diameter	70 mm
Shaft diameter	10 mm (Solid shaft)

Absolute Profibus

TECHNICAL DATA
mechanical (continued)

Flange (Mounting of housing)	Clamping flange
Protection class shaft input (EN 60529) [1]	T4: IP64 or IP67 T6: IP64
Protection class housing (EN 60529)	T4: IP65 or IP67 T6: IP65
Shaft load axial / radial	40 N / 100 N
Max. speed	T4: max. 10000 rpm T6: max. 6000 rpm
Torque	≤ 1 Ncm
Moment of inertia	approx. 20 gcm²
Vibration resistance (DIN EN 60068-2-6)	100 m/s² (10 ... 500 Hz)
Shock resistance (DIN EN 60068-2-27)	1000 m/s² (6 ms)
Ambient temperature	T4: -40 °C ... +60 °C T6: -40 °C ... +40 °C
Storage temperature	-25 °C ... +85 °C
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

[1] No dust explosion-proof (D) for IP64

TECHNICAL DATA
electrical

Supply voltage	DC 10-30 V
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	is automatically set within a range of 9.6 KBaud through 12 MBaud
Device address	set via Bus
Bus termination resistor	external mounting

Absolute Profibus

ELECTRICAL CONNECTIONS
Cable

Color	Profibus
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	Screen connected to encoder housing

[1] used for power supply for an external bus termination resistor

DIMENSIONED DRAWINGS

see chapter "Dimensioned drawings AX 70 / AX 71", starting page 253

ORDERING INFORMATION

Type	Resolution	Supply voltage	Flange, Protection, Shaft [1, 2]	Interface	Connection
☐	☐	☐	☐	☐	☐
AX70 **AX71**	**0010** 10 Bit ST **0012** 12 Bit ST **0013** 13 Bit ST **0014** 14 Bit ST **1212** 12 Bit MT + 12 Bit ST **1213** 12 Bit MT + 13 Bit ST **1214** 12 Bit MT + 14 Bit ST	**E** DC 10 - 30 V	**K.42** Clamping, IP64, 10 mm **K.72** Clamping, IP67, 10 mm	**DP** Profibus	**A** Cable, axial

[1] Dust explosion-proof certification (D) only for IP67
[2] IP67 only with temperature class T4

ORDERING INFORMATION
Selection of cable length

Versions with cable outlet (connection A, B, E or F) are available with various lengths of cable. To order your desired cable length, please add the respective code to the end of your ordering code. Further cable lengths on request.

Code	Cable length
-F0 / without code	5 m
-K0	10 m
-P0	15 m
-U0	20 m
-V0	25 m

ACCESSORIES

see chapter "Accessories", starting page 322

Absolute CANopen

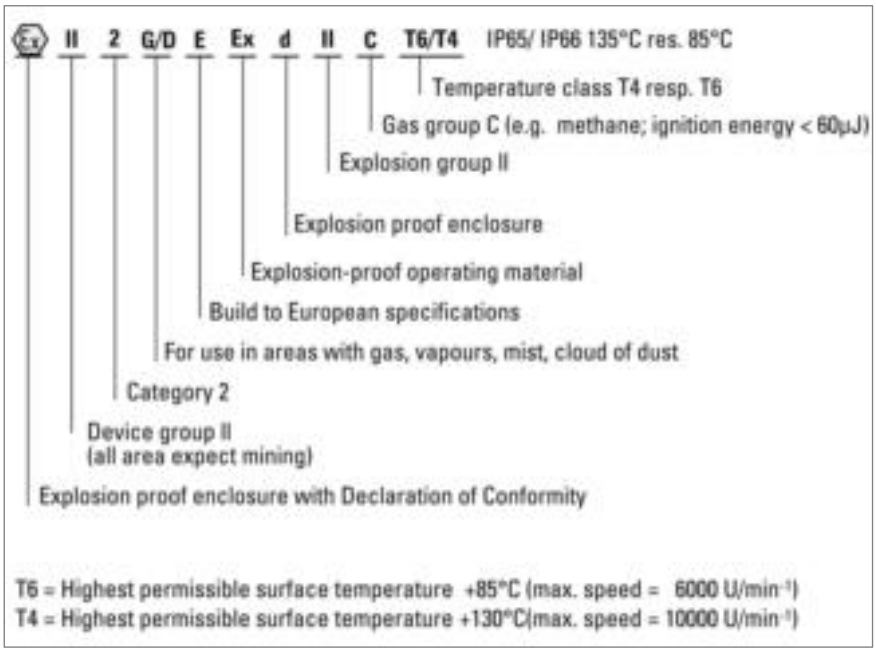
Version AX 70 - Aluminium

Version AX 71 - Stainless Steel

- ATEX certification for gas and dust explosion proof
- Same electrical performance as ACURO industry
- Protection class up to IP67
- Diameter only 70 mm
- Robust design
- Also available with stainless steel housing (AX 71 - CANopen)
- Resolution up to 26 Bit (14 Bit ST, 12 Bit MT)
- Applications: enamelling production line, petro chemistry, bottling machines, mixers, silo works, mills

EX-CLASSIFICATION

The absolute shaft encoder line ACURO is available in explosion proof design with explosion proof enclosure "d" under AX 70 and AX 71 (stainless steel).
The PTB has assured with the Declaration of Conformity that the AX 70 / 71 meets the requirements of safety and health according to EN 50014 and EN 50018. Therefore it is approved in explosive areas, code "Ex II 2 G/D E Ex d II C T4/T6 IP65/ IP66 135°C resp. 85°C".
For applications under tough environmental conditions and food industry the stainless steel version AX 71 is available.



TECHNICAL DATA
mechanical

Housing diameter	70 mm
Shaft diameter	10 mm (Solid shaft)

Absolute CANopen

TECHNICAL DATA
mechanical (continued)

Flange (Mounting of housing)	Clamping flange
Protection class shaft input (EN 60529) [1]	T4: IP64 or IP67 T6: IP64
Protection class housing (EN 60529)	T4: IP65 or IP67 T6: IP65
Shaft load axial / radial	40 N / 100 N
Max. speed	T4: max. 10 000 rpm T6: max. 6000 rpm
Torque	≤ 1 Ncm
Moment of inertia	approx. 20 gcm²
Vibration resistance (DIN EN 60068-2-6)	100 m/s² (10 ... 500 Hz)
Shock resistance (DIN EN 60068-2-27)	1000 m/s² (6 ms)
Ambient temperature	T4: -40 °C ... +60 °C T6: -40 °C ... +40 °C
Storage temperature	-25 °C ... +85 °C
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

[1] No dust explosion-proof (D) for IP64

TECHNICAL DATA
electrical

Supply voltage	DC 10-30 V
Max. current w/o load	250 mA (ST / MT)
Resolution singleturn	10 - 14 Bit
Resolution multiturn	12 Bit
Output code	Binary
Profile/ protocol	CANopen according to DS 301 with profile DSP 406, programmable encoder according class C2
Parametrization	Resolution, Preset, Offset, Direction
Integrated special functions	Speed, Acceleration, Rotery axis, Limit values, Operating time
Bus termination resistor	external mounting

ELECTRICAL CONNECTIONS
Cable

Colour	**CANopen**
yellow	CAN in+
green	CAN in-
pink	CAN out+
grey	CAN out-
blue	CAN GND in
black	CAN GND out
white 0.5 mm	UB in
brown 0.5 mm	0 V in
Screen	Screen connected with encoder housing

Absolute CANopen

DIMENSIONED DRAWINGS

see chapter "Dimensioned drawings AX 70 / AX 71", starting page 253

ORDERING INFORMATION

Type	Resolution	Supply voltage	Flange, Protection, Shaft [1, 2]	Interface	Connection
☐	☐	☐	☐	☐	☐
AX70 **AX71**	**0010** 10 Bit ST **0012** 12 Bit ST **0013** 13 Bit ST **0014** 14 Bit ST **1212** 12 Bit MT + 12 Bit ST **1213** 12 Bit MT + 13 Bit ST **1214** 12 Bit MT + 14 Bit ST	**E** DC 10 - 30 V	**K.42** Clamping, IP64, 10 mm **K.72** Clamping, IP67, 10 mm	**OL** CANopen	**A** Cable, axial

[1] Dust explosion-proof certification (D) only for IP67
[2] IP67 only with temperature class T4

ORDERING INFORMATION
Selection of cable length

Versions with cable outlet (connection A, B, E or F) are available with various lengths of cable. To order your desired cable length, please add the respective code to the end of your ordering code. Further cable lengths on request.

Code	Cable length
-F0 / without code	5 m
-K0	10 m
-P0	15 m
-U0	20 m
-V0	25 m

ACCESSORIES

see chapter "Accessories", starting page 322

Absolute SSI programmable

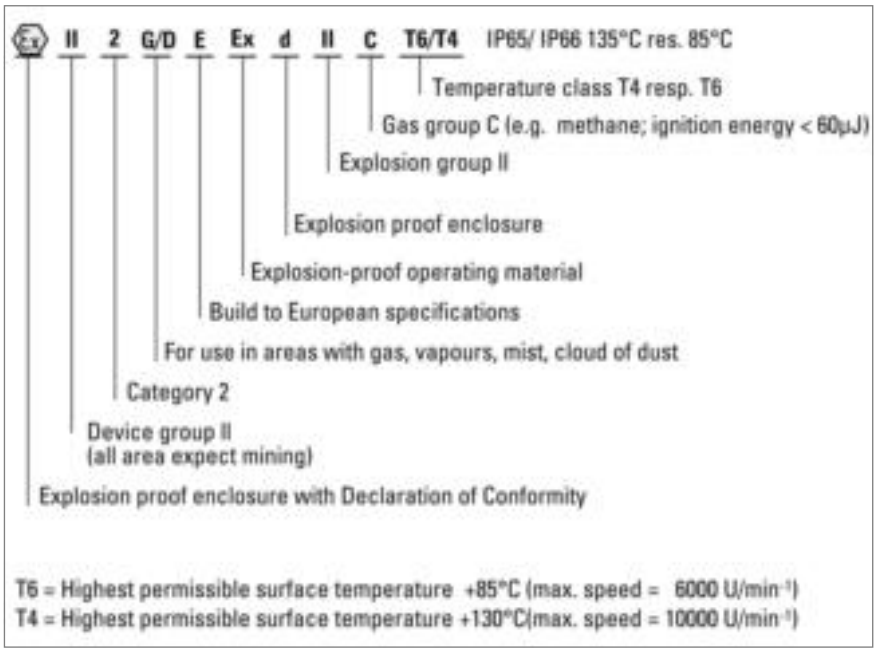
Version AX 70 - Aluminium

Version AX 71 - Stainless Steel

- ATEX certification for gas and dust explosion proof
- Same electrical performance as ACURO industry
- Protection class up to IP67
- Diameter only 70 mm
- Robust design
- Also available with stainless steel housing (AX 71 - SSI-P)
- Resolution up to 29 Bit (17 Bit ST, 12 Bit MT)
- Applications: enamelling production line, petro chemistry, bottling machines, mixers, silo works, mills

EX-CLASSIFICATION

The absolute shaft encoder line ACURO is available in explosion proof design with explosion proof enclosure "d" under AX 70 and AX 71 (stainless steel).
The PTB has assured with the Declaration of Conformity that the AX 70 / 71 meets the requirements of safety and health according to EN 50014 and EN 50018. Therefore it is approved in explosive areas, code "Ex II 2 G/D E Ex d II C T4/T6 IP65/ IP66 135°C resp. 85°C".
For applications under tough environmental conditions and food industry the stainless steel version AX 71 is available.



TECHNICAL DATA
mechanical

Housing diameter	70 mm
Shaft diameter	10 mm (Solid shaft)

Absolute SSI programmable

TECHNICAL DATA
mechanical (continued)

Flange (Mounting of housing)	Clamping flange
Protection class shaft input (EN 60529) [1]	T4: IP64 or IP67 T6: IP64
Protection class housing (EN 60529)	T4: IP65 or IP67 T6: IP65
Shaft load axial / radial	40 N / 100 N
Max. speed	T4: max. 10000 rpm T6: max. 6000 rpm
Torque	≤ 1 Ncm
Moment of inertia	approx. 20 gcm²
Vibration resistance (DIN EN 60068-2-6)	100 m/s² (10 ... 500 Hz)
Shock resistance (DIN EN 60068-2-27)	1000 m/s² (6 ms)
Ambient temperature	T4: -40 °C ... +60 °C T6: -40 °C ... +40 °C
Storage temperature	-25 °C ... +85 °C
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

[1] No dust explosion-proof (D) for IP64

TECHNICAL DATA
electrical

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

[1] Programmable with WIN SSI

RECOMMENDED DATA TRANSFER RATE
bei SSI

The max. data transfer rate depends on the cable length. For Clock / $\overline{\text{Clock}}$ and Data / $\overline{\text{Data}}$ please use twisted pairs. Use shielded cable.

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

Absolute SSI programmable

ELECTRICAL CONNECTIONS
Cable

Color	No.	SSI programmable
white 0.14 mm	6	RS232 RxD
brown 0.14 mm	5	RS232 TxD
green	10	$\overline{\text{Clock}}$
yellow	9	Clock
grey	8	$\overline{\text{Data}}$
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

DIMENSIONED DRAWINGS

see chapter "Dimensioned drawings AX 70 / AX 71", starting page 253

ORDERING INFORMATION

Type	Resolution	Supply voltage	Flange, Protection, Shaft [1, 2]	Interface	Connection
☐	☐	☐	☐	☐	☐
AX70 **AX71**	**0010** 10 Bit ST **0012** 12 Bit ST **0013** 13 Bit ST **0014** 14 Bit ST **0017** 17 Bit ST **1212** 12 Bit MT + 12 Bit ST **1213** 12 Bit MT + 13 Bit ST **1214** 12 Bit MT + 14 Bit ST **1217** 12 Bit MT + 17 Bit ST higher resolution on request	**E** DC 10 - 30 V	**K.42** Clamping, IP64, 10 mm **K.72** Clamping, IP67, 10 mm	**SP** SSI pro-grammable	**A** Cable, axial

[1] Dust explosion-proof certification (D) only for IP67
[2] IP67 only with temperature class T4

ORDERING INFORMATION
Selection of cable length

Versions with cable outlet (connection A, B, E or F) are available with various lengths of cable. To order your desired cable length, please add the respective code to the end of your ordering code. Further cable lengths on request.

Code	Cable length
-F0 / without code	5 m
-K0	10 m
-P0	15 m
-U0	20 m
-V0	25 m

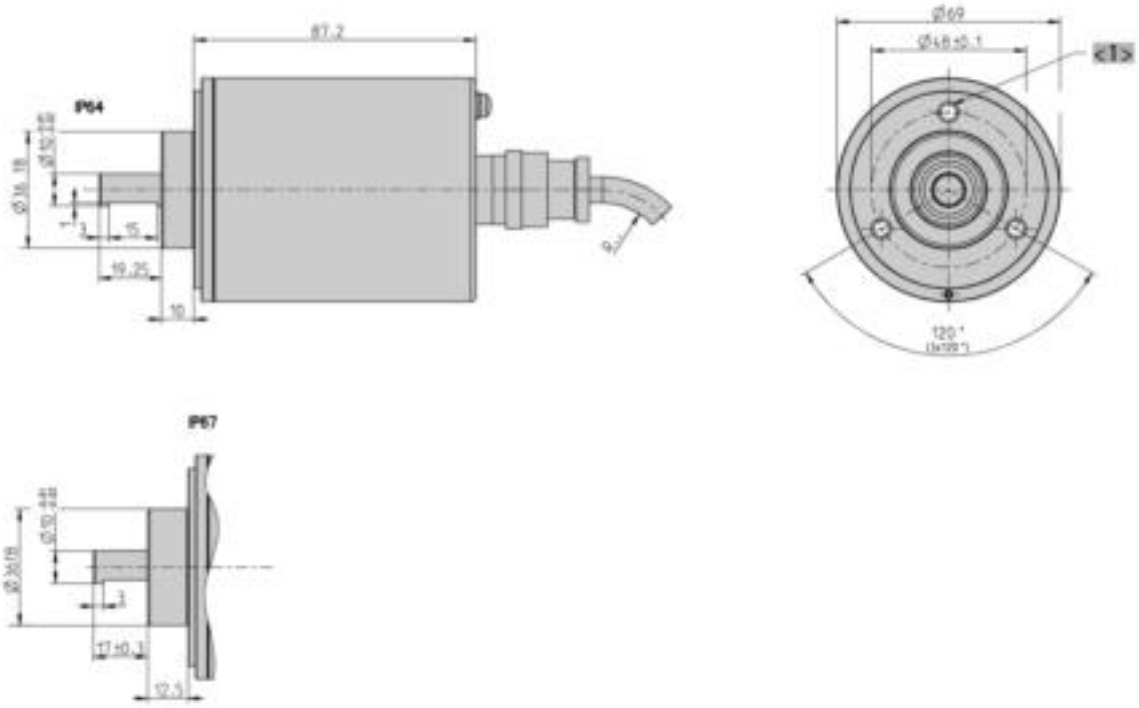
ACCESSORIES

see chapter "Accessories", starting page 322

Absolute Dimensioned Drawings

DIMENSIONED DRAWINGS

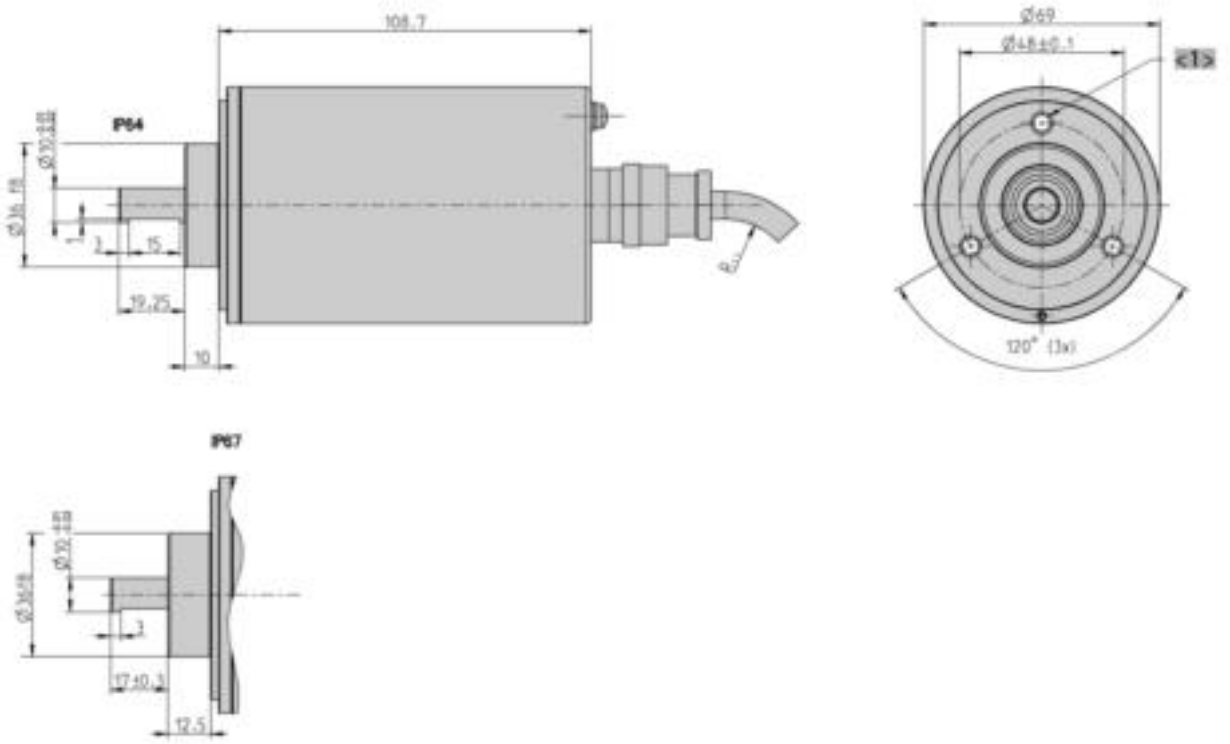
SSI



<1> mounting thread M6x12
Cable bending radius R for flexible installation ≥ 150 mm
Cable bending radius R for fixed installation ≥ 40 mm
Dimensions in mm

DIMENSIONED DRAWINGS (continued)

SSI-P, Profibus, CANopen



<1> mounting thread M6x12

Cable bending radius R for fixed installation ≥ 40 mm

Cable bending radius R for flexible installation ≥ 150 mm

Dimensions in mm