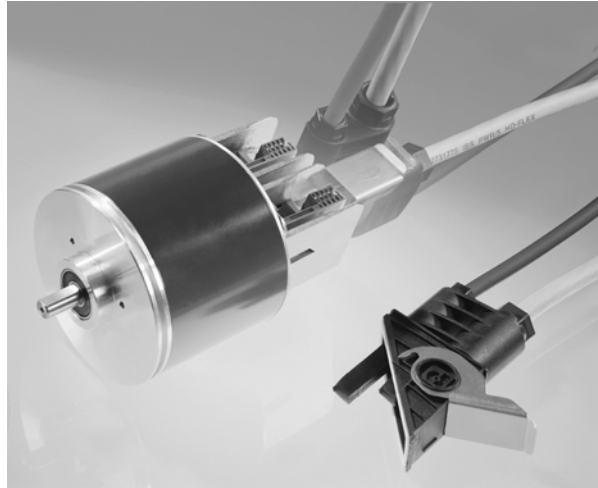


ABSOLUTE ROTARY ENCODER INTERBUS LWL



Main Features

- Compact and heavy duty industrial model
- Interface: INTERBUS (Remote-Bus) with up to 2Mbaud Data transmission
- Bus connector: Fiber optic technology
- ENCOM Profile: K3 (programmable)
- Resolution: max. 25 Bit = 33,554,432 steps over 4,096 Revolutions
- Connector: Power supply with QUICKON Connector technology

Programmable Parameters

- Direction of rotation (complement)
- Total resolution
- Preset value
- Zero point displacement
- Read-out of parameter values
- Output of
 - parameter values
 - velocity
 - cam functions
- Optional:
 - Output of temperature

Mechanical Structure

- Flange and housing of Aluminum and Brass respectively
- Shaft of stainless steel
- Precision ball bearings with sealing or cover rings
- Code disc made of durable and unbreakable plastic

Electronic Features

- Temperature insensitive IR-Opto-Receiver-Array
- Optical power regulated
- 400 Mio. write cycles
- Automatic end detection
- Only one IR-transmitter-diode per opto-array
- Polarity inversion protection
- Over voltage peak protection

ABSOLUTE ROTARY ENCODER INTERBUS LWL

Technical Data

Electrical Data

Supply voltage	10 - 30 V DC
Current consumption	Max. 3.5 Watt
EMC	EN 50081-2, EN 61000-6-2
Interface	INTERBUS for fiber optics (PSM 980/1000 µm)
Transmission rate	500 kBaud or 2 MBaud
Accuracy of division	± ½ LSB
Step frequency LSB	Max. 100 kHz (valid code)
Electrical lifetime	> 10 ⁵ h
Connector	Rugged Line (QUICKON for power supply, separate connector for fiber optics)

Mechanical Data

Housing	Aluminum
Lifetime	> 10 ⁵ h at 1,000 rpm
Inertia of rotor	≈ 50 gcm ²
RPM	Max. 6,000 (continuously)
Shock (EN 60068-2-27)	≤ 30 g (halfsine, 11 ms)
Permanent shock (EN 60028-2-29)	≤ 10 g (halfsine, 16 ms)
Vibration (EN 60068-2-6)	≤ 10 g (10 Hz ... 1,000 Hz)
Weight, single-turn	≈ 1140 g
Weight, multi-turn	≈ 1200 g
Shaft loading	Axial 20 N, radial 110 N
Friction torque	≤ 5 Ncm
Flange	Clamp (F)
Shaft diameter	10 mm
Shaft length	20 mm

Environmental Conditions

Operating temperature	0 ... + 55 °C
Storage temperature	- 40 ... - 85 °C
Humidity	98 % (without liquid state)
Protection class (EN 60529)	
Casing side	IP 65
Shaft side	IP 65 up to 0.5 bar

ABSOLUTE ROTARY ENCODER INTERBUS LWL

Interface

Installation

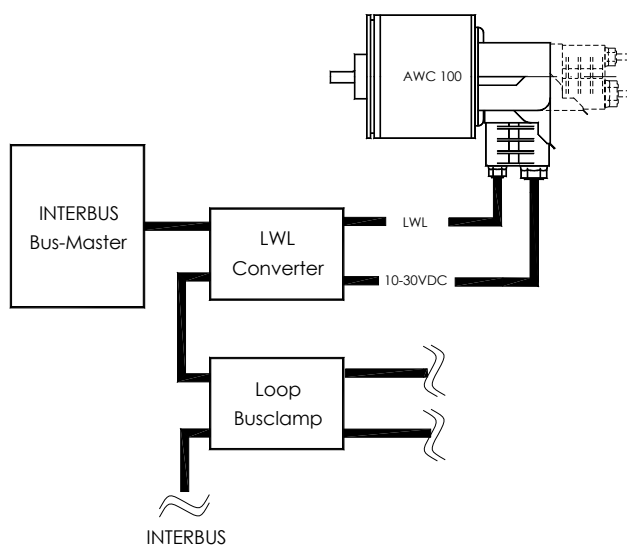
The rotary encoder is connected by the Rugged Line plug. Within this special plug the power supply lines are clamped to five QUICKON cutting connectors and the fiber optic is attached to another connector. The Rugged Line plug can be attached to the radial encoder either axially or radially. The address of the encoder is derived from its physical position in the network. The AWC 58 is designed for a remote bus with up to 32 bits of I/O data. In the master (controller) the actual process values occupy two word addresses for profile K3. The distance between two optical fiber bus participants should not exceed 40 m.

If the rotary encoder contains the Phoenix device SUPI 3 OPC, it will automatically regulate the power output of the optical fiber emitter. Furthermore, it will detect whether other participants have such a regulation. An end recognition (RBST) is executed automatically, and therefore the bridge installation in the plugs (as with former models) are no longer necessary.

The bus can read out the following parameters: the length of the resuming interface, the length of the pass and the corresponding power step of the optical fiber emitter. Six LEDs indicate the bus status.

IB-Coupling	Class	max. Bits	Progr.	No. of words	ID-Code	
					Binary	hex
Remote bus	K3	32	yes	2 IN + 2 OUT	0000 0010 0011 0111	0255

Connection on the 2-wired Installation Remote Bus



ABSOLUTE ROTARY ENCODER INTERBUS LWL

Interface

Programmable Parameters

The Interbus LWL encoder is programmable parameters can be programmed directly via the according to the K3 ENCOM profile*. The following INTERBUS network without any extra devices:

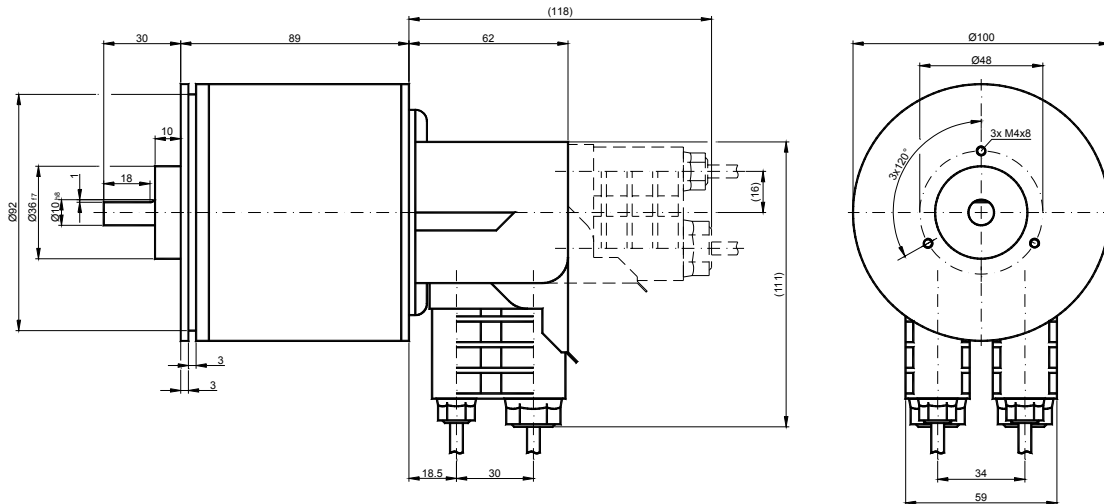
Code sequence	As an operating parameter the code sequence (complement) can be programmed. This parameter determines whether the output code increases or decreases when the axis is turned clockwise.
Output steps over number of revolutions	This parameter defines the number of measuring steps over the number of revolutions described below.
Number of revolutions	This parameter determines the number of revolutions used to calculate the steps per revolution. For example: Total resolution=8, Revolutions=2, then the Steps per revolution will be equal to 4. This value must always be less than the total allowed revolutions (for a multi-turn, 4,096).
Preset value	The preset value is the desired output value for the actual position of the axis. The actual output value will be set to this preset value.
Zero point displacement	This parameter sets the zero point of the output in relation to the physical zero point position of the encoder. (same functionality as preset value)
Velocity	Optionally, the current rotational velocity of the axis can be output in revolutions per minute.
Read-out parameter values and temperature	All parameter values, certain other information (specified in the manual) and the temperature value of an optional temperature sensor can be read out via the bus
Cam functions	Cam functions which are entirely programmable via the bus are integrated in the encoder.

* ENCOM: User group of encoder manufacturers in the INTERBUS club.

ABSOLUTE ROTARY ENCODER INTERBUS LWL

Mechanical drawings and diagnostics

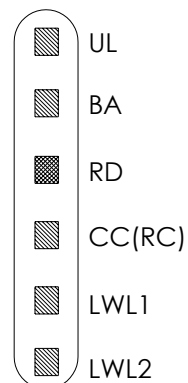
Clamp Flange (F) $\varnothing 100$



Diagnostics

The six differently colored LEDs on the rotary encoder will indicate the status of the participants and the bus during the operation process of the INTERBUS LWL bus system. For details please refer to the user manual.

Function	Color
UL (Power)	green
Remote Control	green
Bus Active	green
Remote bus Disable	yellow
Fiber optics 1	yellow
Fiber optics 2	yellow



ABSOLUTE ROTARY ENCODER INTERBUS LWL

Models / Ordering Description

Description	Type Key								
Absolute rotary encoder	AWC	100	.. - -	F	B	00	K3	0RL
Diameter in mm									
Steps per revolution	4096	12							
	8192	13							
No. of revolutions	1			1					
	4096			4096					
Flange	Clamp Flange (shaft = 10 mm Ø)				F				
Code	Binary					B			
Version							00		
Interface	INTERBUS programmable according to K 3							K3	
Options	Without							0	
	Shaft sealing								W
Connection	Rugged Line-Connector *1)								0RL

*1) to maintain the protection type IP65, **both** Rugged line plugs have to be attached to the encoder, even if one of the lines is not used!

Further models on request.

Accessories and Documentation

Description		Type
Connector	Rugged Line	0RL
Shaft coupling	Drilling: 10 mm	GS 10
Programming software *2)	Floppy disc with programming software for Windows and the Phoenix PC-ISA Master Card	DK-IB
Clamp disc	4 pcs. / AWC	SP 15
Clamp ring	2 pcs. / AWC	SP H
User manual*2)	Installation and configuration manual, English	UME-IB
User manual*2)	Installation and configuration manual, German	UMD-IB

*) These can be downloaded free of charge from our Homepage www.posital.de.

We do not assume responsibility for technical inaccuracies or omissions. Specifications are subject to change without notice.