



# Online Data sheet

## Encoder WDG 58V

[www.wachendorff-automation.com/wdg58v](http://www.wachendorff-automation.com/wdg58v)

### Wachendorff Automation systems and encoders

- Complete systems
- Industrial rugged encoders to suit your application
- Maximum permissible loads
- Made in Germany

Wachendorff Part Number	AutomationDirect Equivalent	PPR
WDG 58V-60-ABN-R30-L3-050	58V603EL3050	60
WDG 58V-100-ABN-R30-L3-050	58V1003EL3050	100
WDG 58V-360-ABN-R30-L3-050	58V3603EL3050	360
WDG 58V-500-ABN-R30-L3-050	58V5003EL3050	500
WDG 58V-1000-ABN-R30-L3-050	58V10003EL3050	1000
WDG 58V-1024-ABN-R30-L3-050	58V10243EL3050	1024
WDG 58V-2000-ABN-R30-L3-050	58V20003EL3050	2000
WDG 58V-2500-ABN-R30-L3-050	58V25003EL3050	2500
WDG 58V-4096-ABN-R24-L3-050	58V40963DL3050	4096
WDG 58V-4096-ABN-R05-L3-050	58V40963CL3050	4096
WDG 58V-5000-ABN-R24-L3-050	57V50003DL3050	5000
WDG 58V-5000-ABN-R05-L3-050	58V50003CL3050	5000

Accessory	Description
DSK291010	Encoder coupling, double loop, 10mm bore, galvanized steel and polyurethane body, setscrew.
DSK481010	Encoder coupling, double loop, 10mm bore, galvanized steel and polyurethane body, setscrew.
FB29B1010	Encoder coupling, bellows, 10mm bore, stainless steel and aluminum body, setscrew.
MR200KG10	Encoder measuring wheel, 63.7mm diameter (200mm circumference), 10mm shaft, aluminum and plastic, grooved Hytrel contact surface.
MR200KH10	Encoder measuring wheel, 63.7mm diameter (200mm circumference), 10mm shaft, aluminum and plastic, smooth Hytrel contact surface.
MR200NG10	Encoder measuring wheel, 63.7mm diameter (200mm circumference), 10mm shaft, aluminum, pimpled rubber contact surface.
MR200KR10	Encoder measuring wheel, 63.7mm diameter (200mm circumference), 10mm shaft, aluminum, knurled metal contact surface.
MR500KH10	Encoder measuring wheel, 159.2mm diameter (500mm circumference), 10mm shaft, aluminum and plastic, smooth Hytrel contact surface.
MR500KG10	Encoder measuring wheel, 159.2mm diameter (500mm circumference), 10mm shaft, aluminum and plastic, grooved Hytrel contact surface.
MR500NG10	Encoder measuring wheel, 159.2mm diameter (500mm circumference), 10mm shaft, aluminum, pimpled rubber contact surface.
MR500KR10	Encoder measuring wheel, 159.2mm diameter (500mm circumference), 10mm shaft, aluminum, knurled metal contact surface.
MR500KV10	Encoder measuring wheel, 159.2mm diameter (500mm circumference), 10mm shaft, aluminum, smooth vulcanized rubber contact surface.
WDGMA51051	Spring-loaded counter-clockwise arm, aluminum. Mounting bracket included.
WDGMA51052	Spring-loaded clockwise arm, aluminum. Mounting bracket included.
WDGDH10000	Spring-loaded encoder mount, aluminum.
WDGQF58B04	Square mounting flange, 65–75mm adjustable bolt hole circle, aluminum.
MW58B	Right angle bracket, aluminum.
QF58B	Square mounting flange, 48mm bolt hole square, anodized aluminum.

# Encoder WDG 58V

## Especially for food and beverage industry, acid and alkaline resistance



- EHEDG: Tested hygienic design
- Resistance to Salt mist (IEC 60068-2-11)
- Ecolab: Certificate on resistance to cleaning and disinfection agents
- High protection rating IP67 all around and IP69K (high pressure / steam cleaning)
- AISI 316/V4A stainless steel housing, shaft, and flange
- Radial shaft sealing ring with no dead-room (PTFE)
- Full connection protection with 10 VDC up to 30 VDC
- Up to 5000 PPR by use of high grade electronics
- Quadrature output with index
- Universal electrical output accomodates HTL and TTL, single-ended and differential

Electrical Data	R24 Series	R30 Series	R05 Series
Power supply VDC	10–30 VDC	5–30 VDC	4.75–5.5 VDC
Output circuit	HTL inverted	HTL, inv. (TTL/RS422 comp. at 5 VDC)	TTL, RS422 comp. inverted
Signal level H>	H > Vcc - 2.5 VDC	H > Vcc - 10% Vcc	H > 2.5 VDC
Signal level L	L < 2.5 VDC	L < 2.5 VDC	L < 0.5 VDC
Circuit protection*	Yes	inverse-polarity protection only	No
Channels	ABN, and inverted signals	ABN, and inverted signals	ABN and inverted signals

\* See next page for circuit protection details

Electrical Data (Common)	
Output	push-pull
Load	max. 40 mA/channel
Signal level mA	at 20 mA
Signal shape	square wave
Current Consumption	typ. 70 mA
Output frequency	max. 200 kHz

Mechanical Data	
Flange	clamping flange
Flange material	stainless steel, V4A (AISI 316)
Housing material	stainless steel, V4A (AISI 316)
Flange diameter	Ø 58 mm [Ø 2.283"]
Shaft material	stainless steel, V4A (AISI 316)
Shaft length	L 18mm [0.709"]
Max. Permissible shaft loading radial	100 N [10.197 kp]
Max. Permissible shaft loading axial	100 N [10.197 kp]
Bearings type	2 precision ball bearings
Nominal service life	1x10 <sup>9</sup> revs at 100% rated shaft load 1x10 <sup>10</sup> revs at 40% rated shaft load 1x10 <sup>11</sup> revs at 20% rated shaft load
Max. operating speed	3600 rpm

Duty Information	
Customs tariff number	90318020
Country of origin	Germany

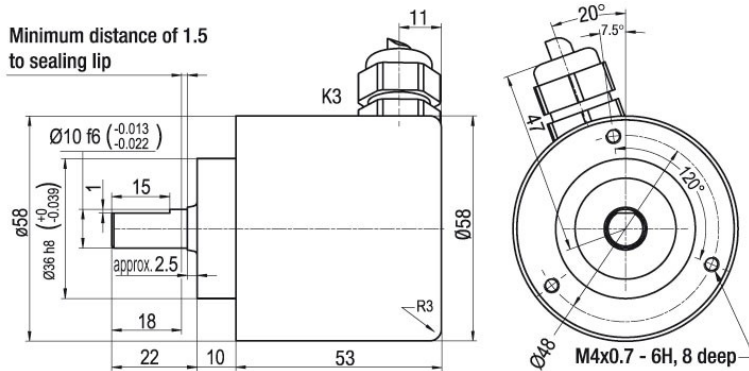
Machinery Directive: basic data safety integrity level	
MTTF <sub>d</sub>	200 years
Mission time (TM)	25 years
Nominal service life (L10h)	1 x 10 <sup>11</sup> revs. at 20% rated shaft load and 3600 rpm
Diagnostic coverage (DC)	0%

Environmental Data	
ESD (DIN EN 61000-4-2)	8 kV
Burst (DIN EN 61000-4-4)	2 kV
includes EMC	DIN EN 61000-6-2 DIN EN 61000-6-3
Vibration (DIN EN 60068-2-6)	50 m/s (10 Hz up to 2000 Hz)
Shock (DIN EN 60068-2-27)	1000 m/s (6 ms)
Electrical Safety	according to DIN VDE 0160

General Data	
Weight	approx. 600g [21.164 oz]
Connections	cable outlet (TPE)
Protection rating (EN 60529)	IP67+IP69K all around. Resistance to salt mist (IED 60068-2-11) after 672 hours
Operating temperature	-20 °C up to +80 °C [-4 °F up to +176 °F]
Storage temperature	-20 °C up to +80 °C [-4 °F up to +176 °F]

More Information	
General technical data and safety instructions <a href="http://www.wachendorff-automation.com/gtd">http://www.wachendorff-automation.com/gtd</a>	

## Cable connection



## Description

**L3** radial, shield connected to encoder housing

Assignments	
	<b>L3</b>
<b>Circuit</b>	R05, R24, R30
<b>GND</b>	WH
<b>(+) Vcc</b>	BN
<b>A</b>	GN
<b>B</b>	YE
<b>N</b>	GY
<b>A inv.</b>	RD
<b>B inv.</b>	BU
<b>N inv.</b>	VT
<b>Shield</b>	flex

## Options

### Cable length

The WDG 58V encoders sold by Automation Direct are supplied with 5 meter cables. The maximum cable length depends on the supply voltage and the frequency; see <https://www.wachendorff-automation.com/download-gtd-incremental-encoders/>

Example: 5 m cable = 050

### Order Key

XXX = Decimeter

### Circuit Protection

Output Circuit Type	Circuit Protection	Inverse-Polarity Protection	Short Circuit Resistance
<b>R05</b>	no	no	yes
<b>R24</b>	yes	yes	yes
<b>R30</b>	no	yes	yes

#### Circuit protection:

Reversing the polarity of the power supply while simultaneously short-circuiting the outputs to each other or to GND or V+ will not result in damage.

- Applying GND and V+ to two outputs is not permitted and can lead to failure.

#### Inverse-polarity protection:

Encoders have reverse polarity protection and can be mis-wired without concern of damage to the encoder. It does not matter if the connections are reversed, even on a long-term basis. Reversing the connection cables of the power supply when the outputs are connected correctly will not result in damage. However, the encoder will not function properly.

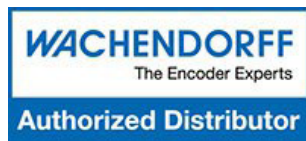
#### Short circuit resistance:

Requirements:

- Supply lines not reversed!
- Only one output and max. permissible supply voltage observed!

Wachendorff encoders are short-circuit-proof between two outputs or against GND or V+.

Example Ordering WDG-58V-xxxx-ABN-R05-L3-050 (ADC Part Number 58Vxxxx3CL3050)		
Order No.	Type	
WDG 58V	WDG 58V	
	<b>Pulses per revolution PPR</b>	
xxxx	60, 100, 360, 500, 1000, 1024, 2000, 2500, 4096, 5000	
	<b>Channels:</b>	
ABN	AB quadrature with index pulse	
	<b>Output circuit</b>	
	<b>Power supply VDC</b>	<b>Output circuit</b>
R05	5	TTL, RS422 comp. inverted
R24	10-30	HTL inverted
R30	5-30	HTL, inv. (TTL/RS422 comp. at 5 VDC)
	<b>Electrical connections</b>	
L3	Radial, shield connected to encoder housing	
	<b>Options</b>	
	<b>Description</b>	
050	Cable length 5 meters (pigtail termination)	



For additional information, please contact AutomationDirect.  
[www.automationdirect.com](http://www.automationdirect.com)