

**Connection configuration for cable and connector outlets:**

On the following pages you will find our standard configuration for cable and connector outlets with regard to the corresponding output circuits. If you would like a special configuration to suit your application, please call Patrick Steiner on Tel.: +49 (0) 67 22 / 99 65 523 or send him an e-mail at pst@wachendorff.de

**Connection configuration for cable outlet:**

		Cable							
Description	K1 radial			K2/L2 axial; K3/L3 radial					
<b>Circuit</b>	F/H/05 F/H24 H30	245	R30	G05 G24	F/H05 F/H24 H30	I05 I24 245	P/R05 P/R24 645 R30	SIN	SIN
encoder type						not WDG58S WDG58V	not WDG58S WDG58V	WDG58 WDG63 WDG67 WDG90 WDG115	WDG80H WDG100H
<b>Minus U-</b>	WH	WH	WH	WH	WH	WH	WH	WH	WH
<b>Plus U+</b>	BN	BN	BN	BN	BN	BN	BN	BN	BN
<b>A</b>	GN	GN	GN	GN	GN	GN	GN	GN	GN
<b>B</b>	YE	YE	YE	YE	YE	YE	YE	GY	GY
<b>N</b>	GY	GY	GY	GY	GY	GY	GY	-	BK
<b>Light reserve warning</b>	-	-	-	PK	-	PK	-	-	RD
<b>A inv.</b>	-	RD	RD	-	-	RD	RD	YE	YE
<b>B inv.</b>	-	BK	PK	-	-	BK	BK	PK	PK
<b>N inv.</b>	-	VT	BU	-	-	VT	VT	-	VT
<b>Shield</b>	Litze								
	Shield not connected to encoder housing			Shield connected to encoder housing (only L2/L3)					

**Special cable configuration for cable outlet  
Encoder WDG58S, WDG58V:**

		Cable			
Description	K2, L2 axial; K3, L3 radial				
<b>Circuit</b>	G/05 G24	F/H/05 F/H24 H30	I05 I24 245	P/R05 P/R24 645 R30	
<b>Minus U-</b>	WH	WH	WH	WH	
<b>Plus U+</b>	BN	BN	BN	BN	
<b>A</b>	GN	GN	GN	GN	
<b>B</b>	YE	YE	YE	YE	
<b>N</b>	GY	GY	GY	GY	
<b>Light reserve warning</b>	PK	-	PK	-	
<b>A inv.</b>	-	-	RD	RD	
<b>B inv.</b>	-	-	BU	BU	
<b>N inv.</b>	-	-	VT	VT	
<b>Shield</b>	Flex				
	Shield not connected to encoder housing				




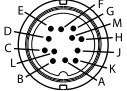
**Special cable configuration for cable outlet  
Encoder WDG24A/24C:**

		Cable	
Description	K7/L7 radial		
<b>Circuit</b>	M05 M24 M30		
<b>Minus U-</b>	WH		
<b>Plus U+</b>	BN		
<b>A</b>	GN		
<b>B</b>	YE		
<b>N</b>	GY		
<b>Light reserve warning</b>	-		
<b>A inv.</b>	RD		
<b>B inv.</b>	PK		
<b>N inv.</b>	BU		
<b>Shield</b>	Flex		
	Shield connected to encoder housing (only L7)		

**Abbreviations for cable colours**






- BK = black
- BN = brown
- BU = blue
- GD = gold
- GN = green
- GY = grey
- PK = pink
- RD = red
- SR = silver
- TQ = turquoise
- OG = orange
- VT = violet
- WH = white
- YE = yellow

Pin assignment connector SI/SH (M16x0,75), 5-, 6-, 8-, 12-pin:


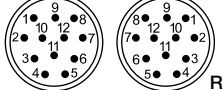
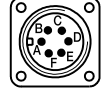

											
Type	M16x0,75										
Description	SI5 axial, SH5 radial, 5-pin		SI6 axial, SH6 radial, 6-pin		SI8 axial, SH8 radial, 8-pin		SI12 axial, SH12 radial, 12-pin				
Circuit	F/H/05 F/H24 H30	G05 G24	F/H/05 F/H24 H30	F/H05 F/H24 H30	P/R05 P/R24 SIN R30	G/05 G24	F/H05 F/H24 H30	105 124 245	P/R05 P/R24 645 R30	SIN WDG58 WDG63 WDG67 WDG90 WDG115	SIN WDG80H WDG100H
encoder type											
Minus U-	1	6	6	1	1	K / L	K / L	K / L	K / L	K / L	K / L
Plus U+	2	1	1	2	2	M / B	M / B	M / B	M / B	M / B	M / B
A	3	2	2	3	3	E	E	E	E	E	E
B	4	4	4	4	4	H	H	H	H	H	H
N	5	3	3	5	5	C	C	C	C	-	C
Light reserve warning	-	5	-	-	-	G	-	G	-	-	G
A inv.	-	-	-	-	6	-	-	F	F	F	F
B inv.	-	-	-	-	7	-	-	A	A	A	A
N inv.	-	-	-	-	8	-	-	D	D	-	D
n. c.	-	-	-	6, 7, 8	-	A, D, F, J	A, D, F, G, J	J	G, J	D, G, J	J
Shield	-	-	-	-	-	-	-	-	-	-	-

Connector connected to encoder housing

Accessories






IP40 	KD-5-40	-	KD-8-40, KD-8-40-SIN	-
IP40 	-	-	-	-
IP65 	-	-	-	-
IP67 	-	-	KD-8-67 (not SIN)	KD-SH12-67 (not Sinus/Cosinus)
IP67 	-	KDA-6-67	KDA-8-67 (not SIN)	-

Pin assignment connector S2/S3 (M16x0,75), 7-pin; connector S4/S5 (M23), 12-pin; MIL-connector, 6-pin; Valve-connector, 4-pin:

											
Type	M16x0,75	M23							MIL	Valve	
Description	S2 axial, S3 radial, 7-pin	S4 axial, S4R axial, S5 radial, S5R radial, 12-pin							S6 radial, 6-pin	S7 axial, 4-pin	
Circuit	G05 G24	F/H/05 F/H24 H30	G05 G/24	F/H05 F/H24 H30	105 124 245	P/R05 P/R24 645 R30	SIN WDG58 WDG63 WDG67 WDG90 WDG115	SIN WDG80H WDG100H	G/05 G24	F/H05 F/H24 H30	F/H/05 F/H24 H30
encoder type											
Minus U-	1	1	10	10	10	10	10	10	A	A	1
Plus U+	2	2	12	12	12	12	12	12	F	F	2
A	3	3	5	5	5	5	5	5	C	C	3
B	4	4	8	8	8	8	8	8	B	B	4
N	5	5	3	3	3	3	-	3	D	D	-
Light reserve warning	6	-	11	-	11	-	-	7	E	-	-
A inv.	-	-	-	-	6	6	6	6	-	-	-
B inv.	-	-	-	-	1	1	1	1	-	-	-
N inv.	-	-	-	-	4	4	-	4	-	-	-
n. c.	7	-	7	6, 7, 8	2, 7, 9	2, 7, 9, 11	2, 3, 4, 7, 9, 11	2, 9, 11	-	E	-
Shield	-	-	-	-	-	-	-	-	-	-	-

Connector connected to encoder housing

Accessories

IP40 	KD-7-40	-	KM-6-40	-
IP40 	KDA-7-40	-	-	-
IP65 	-	-	-	KVA-4-65
IP67 	KD-7-67	-	KD-12-67	-
IP67 	KDA-7-67	-	KDA-12-67	-

Pin assignment connector SK6 (M8x1) 6-pin and SB/SC (M12x1), 5-, 6-, 8-, 12-pin:

Type	M8x1	M12x1								
Description	SK6 axial, 6-pin	SB4 axial, SC4 radial, 4-pin	SB5 axial, SC5 radial, 5-pin	SB8 axial, SC8 radial, 8-pin			SB12 axial, SC12 radial, 12-pin			
Circuit	M05 M24 M30	F/H/05 F/H24 H30	F/H/05 F/H24 H30	F/H05 F/H24 H30	P/R05 P/R24 R30	SIN	G05 G24	F/H05 F/H24 H30	I05 I24 245	P/R05 P/R24 645 R30
Minus U-	3	3	3	1	1	1	3	3	3	3
Plus U+	2	1	1	2	2	2	1	1	1	1
A	4	2	4	3	3	3	4	4	4	4
B	5	4	2	4	4	5	6	6	6	6
N	1	-	5	5	5	7	8	8	8	8
Light reserve warning	-	-	-	-	-	-	5	-	5	-
A inv.	-	-	-	-	6	4	-	-	9	9
B inv.	-	-	-	-	7	6	-	-	7	7
N inv.	-	-	-	-	8	8	-	-	10	10
n. c.	6	-	-	6, 7, 8	-	-	2, 7, 9, 10, 11, 12	2, 11, 12	2, 11, 12	2, 5, 11, 12
Shield	-	-	-	-	-	-	-	-	-	-

Connector connected to encoder housing

Accessories

IP67		5 m	SAK-6-67-05	KI-4-67-05-S	KI-5-67-05-S	KI-8-67-05-S	KI-8-67-SIN-05	KI-12-67-05-S
IP67		5 m	-	KIA-4-67-05-S	KIA-5-67-05-S	KIA-8-67-05-S	KIA-8-67-SIN-05	KIA-12-67-05-S
IP67		10 m	-	KI-4-67-10-S	KI-5-67-10-S	KI-8-67-10-S	KI-8-67-SIN-10	KI-12-67-10-S
IP67		10 m	-	KIA-4-67-10-S	KIA-5-67-10-S	KIA-8-67-10-S	KIA-8-67-SIN-10	KIA-12-67-10-S

Pin assignment SUBD-connector, 15-polig:

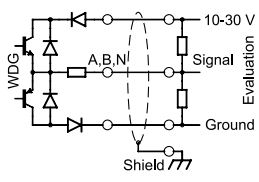
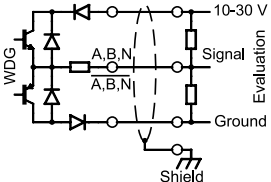
Type	SUBD-connector			
Description	SD15 radial 15-pin			
Circuit	G05 G24	F/H/05 F/H24 H30	I05 I24 245 SIN	P/R05 P/R24 645 R30
Minus U-	4	4	4	4
Plus U+	3	3	3	3
A	1	1	1	1
B	5	5	5	5
N	7	7	7	7
Light reserve warning	14	-	14	-
A inv.	-	-	2	2
B inv.	-	-	6	6
N inv.	-	-	8	8
n. c.	2, 6, 8, 9, 10, 11, 13, 15	2, 6, 8, 9, 10, 11, 13, 14, 15	9, 10, 11, 13, 15	9, 10, 11, 13, 14, 15
Shield	12	12	12	12

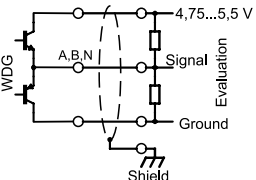
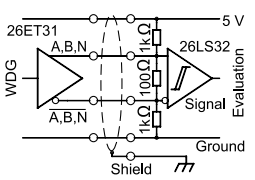
Connector connected to encoder housing

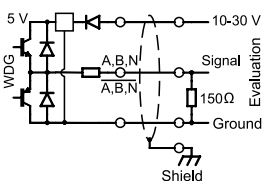
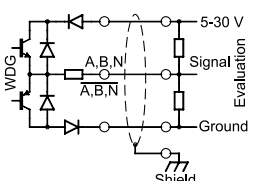
Output circuits / Electrical Data Sin/Cos

Key	SIN(Sinus/Cosinus)
Power supply	4,75 VDC up to 5,5 VDC
Current consumption	max. 100 mA without load
Channels / Output	Sinus, Cosinus, N
Load on the output	min. 120 Ohm terminating resistor between + and - output
Signal level	1 V <sub>SS</sub> +/- 25%
Limit frequency (-3dB)	100 kHz
Circuit protection	no
Light reserve warning	yes
Cable length	max. 150 m at <260pF/m

Output circuits / Electrical Data

Key	G24 (HTL)	H24 (HTL)	F24 (HTL)	I24 (HTL)	R24 (HTL)	P24 (HTL)	M24 (HTL)
Output circuit							
Power supply	10 VDC up to 30 VDC						
Current consumption	max. 70 mA		max. 100 mA	max. 70 mA		max. 100 mA	max. 40 mA
Channels	A, B, N			A, B, N, $\bar{A}$ , $\bar{B}$ , $\bar{N}$			
Output	push-pull						
Load	max. 40 mA / channel						max. 30 mA / channel
Signal level	bei 20 mA H > $U_B - 2,5$ VDC L < 2,5 VDC						
Pulse frequency	max. 200 kHz		max. 600 kHz	max. 200 kHz		max. 600 kHz	max. 20 kHz
Circuit protection	yes						
Light reserve warning	yes	no		yes	no		

Key	G05 (TTL)	H05 (TTL)	F05 (TTL)	I05 (RS422 TTL)	R05 (RS422 TTL)	P05 (RS422 TTL)	M05 (RS422 TTL)
Output circuit							
Power supply	4,75 VDC up to 5,5 VDC						
Current consumption	max. 70 mA		max. 100 mA	max. 70 mA		max. 100 mA	max. 40 mA
Channels	A, B, N			A, B, N, $\bar{A}$ , $\bar{B}$ , $\bar{N}$			
Output	push-pull						
Load	max. 40 mA / channel						max. 30 mA / channel
Signal level	at 20 mA H > 2,5 VDC L < 0,5 VDC						
Pulse frequency	max. 200 kHz		max. 2 MHz	max. 200 kHz		max. 2 MHz	max. 20 kHz
Circuit protection	no						
Light reserve warning	yes	no		yes	no		

Key	245 (TTL)	645 (RS422 TTL)	H30 (HTL)	R30 (HTL)	M30 (HTL)
Output circuit					
Power supply	10 VDC up to 30 VDC		5 VDC up to 30 VDC		
Current consumption	max. 70 mA	max. 100 mA	max. 70 mA		max. 40 mA
Channels	A, B, N, $\bar{A}$ , $\bar{B}$ , $\bar{N}$				
Output	push-pull				
Load	max. 40 mA / channel				max. 30 mA / channel
Signal level	at 20 mA H > 2,5 VDC L < 1,2 VDC		at 20 mA H > $U_B - 10\%$ $U_B$ L < 2,5 VDC		
Pulse frequency	max. 200 kHz	max. 2 MHz	max. 200 kHz		
Circuit protection	only inverse-polarity protection				
Light reserve warning	yes	no	no		no