ENCODER Incremental Angle Transducer



Successor is the B36 / B58 Only encoder which are on stock are available

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Series A36, A58

Key-Features:

- Incremental output Linedriver L (RS422, TTL), or Push-Pull G

- Housing diameter 36 mm or 58 mm
- Solid shaft, hollow shaft and through hollow shaft
- Protection class IP64, solid shaft version also IP67
- Temperature range up to -20...+85 °C
- Output frequency up to 300 kHz
- Rotation speed up to 12.000 r/min
- Aluminium housing
- Customised versions available



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TECHNICAL DATA A36

		Solid shaft	Hollow shaft / Through hollow shaft	
Shaft diameter D	[mm]	6	6 / 6.35 / 8 (depth of hollow shaft = 2 x D)	
Selectable resolution *	[pulses/turn]	25 / 100 / 125 / 200 / 250 / 300 / 360 / 500 / 1000) / 1024 / 1250 / 1500 / 2000 / 2048 / 2500 / 3600	
Sensor element		Incremental-Encoder (with optical code disk)	
Output signal		A/B-Pulses (90° phase-delayed), Z-Puls	e (plus inverted pulses A _{not} , B _{not} , Z _{not})	
Electrical data		see page 6		
Maximum rotation speed	[r/min]	12.000	6000	
Maximum shaft load	[N]	radial 40, axial 20	radial 40, axial 20	
Moment of inertia	[kgm²]	0,2x10 ⁻⁶	0,2x10 ⁻⁶	
Starting torque at 20°C	[Nm]	<0.05	<0.05	
Shaft material		stainless steel	brass	
Working temperature	[°C]	-20+85	-20+85	
Protection class		shaft: IP64, housing IP64 (IP67 optional)	shaft: IP64, housing IP64	
Shock resistance		1000 m/s²; 6 ms	1000 m/s²; 6 ms	
Vibration resistance		100 m/s²; 55-2000 Hz	100 m/s²; 55-2000 Hz	
Weight	[g]	approx. 80	approx. 80	
Housing material		Aluminium	Aluminium	
Electrical connection		cable output or connector output M12	cable output	

* resolution can be raised by the factor 4 using quadruple edge detection









TECHNICAL DATA A58

		Solid shaft	Hollow shaft / Through hollow shaft	
Shaft diameter D	[mm]	6 / 10 / 12	12 / 20 / 25 / 28	
Selectable resolution *	[pulses/turn]	60 / 100 / 125 / 200 / 250 / 400 / 500 /	960 / 1000 / 1024 / 2000 / 2048 / 5000	
Sensor element		Incremental-Encoder (with optical code disk)		
Output signal		A/B-Pulses (90° phase-delayed), Z-Puls	se (plus inverted pulses A _{not} , B _{not} , Z _{not})	
Electrical data		see page 6		
Maximum rotation speed	[r/min]	12.000	2500	
Maximum shaft load	[N]	radial 40, axial 60	radial 60, axial 80	
Moment of inertia	[kgm²]	1,4x10 ⁻⁶	3.5x10 ⁻⁶	
Starting torque at 20°C	[Nm]	<0.05 Nm	<0.1 Nm	
Shaft material		stainless steel	stainless steel	
Working temperature	[°C]	-30+85	-20+70 (up to max. 2000 r/min), otherwise -20+60	
Protection class		shaft: IP64, housing IP67	shaft: IP64, housing IP64 (through hollow shaft IP67)	
Shock resistance		1000 m/s²; 6 ms	1000 m/s²; 6 ms	
Vibration resistance		100 m/s²; 55-2000 Hz	100 m/s²; 35-2000 Hz	
Weight	[g]	approx. 250	approx. 400	
Housing material		Aluminium	Aluminium	
Electrical connection		cable output, connector output M12 or M23	radial: cable output, connector output M12 or M23	

 * resolution can be raised by the factor 4 using quadruple edge detection









ELECTRICAL CONNECTION A36, A58

Signal	0 V	+V	0 V_sens*	+V *	А	A _{Not}	В	B _{Not}	Z	Z _{Not}	screen
Connector M23, 12-pole	10	12	11	2	5	6	8	1	3	4	housing
Connector M12, 8-pole	1	2	-	-	3	4	5	6	7	8	housing
Cable output	white	brown	black	violet	green	y ellow	grey	pink	blue	red	housing

* For Linedriver L only. For long cable lengths it may occur that the operating voltage at the sensor does not suffice due to the output resistance. With the sensor lines $0 V_{eane}$ and $+V_{eane}$ the operating voltage can be checked and, if necessary, be readjusted at the input connection.

+V:	Encoder power supply +VDC	A, A _{Not} :	Incremental output channel A
0 V:	Encoder power supply ground GND (0 V)	B, B _{Not} :	Incremental output channel B
0 V _{sens} / +V _{sens} :	Using the sensor outputs of the encoder, the voltage	Z, Z _{Not} :	Reference signal
	present can be measured and if necessary increased accordingly		

Connector output M23, 12 poles	Connector output M12, 8 poles	r output M12, 8 poles Cable output					
			Cable type	PVC, flexible			
			Cable direction	radial or axial			
			Length	2.0 m			
2 10 12 7			Diameter	ø 4.5 mm			
3 10 8			Wires	8 (push-pull) and 10 (linedriver) x 0.14 mm ²			
õ õ			Temperature	fixed installation -30+85 °C			
				flexible installation -20+85 °C			
			Assignment	see table above			

ELECTRICAL DATA A36, A58

Electrical Data		Linedriver L	Push Pull G
		RS422 (TTL compatible)	
Power supply	[VDC]	5, ±5 %	830
Current consumption without load	[mA]	typ. 40, max. 90	typ. 40, max. 100
Load / channel A36	[mA]	max. ±20	max. ±20
Load / channel A58	[mA]	max. ±20	max. ±40
Pulse frequency A36	[kHz]	max. 300	max. 200
Pulse frequency A58	[kHz]	max. 300	max. 200
Signal level high	[V]	min. 2.5	min. +V – 3
Signal level low	[V]	max. 0.5	max. 0.5







Output signal

Pulses A and B are 90° phase-delayed (detection of direction). The Z-Pulse is emitted once per turn. The Z-Pulse can be used as a reference mark.

The diagram shows the signal without inverted pulses



ACCESSORIES



Couplings

Bellows couplings are used for the free of backlash connection between an encoder and a shaft. The couplings are free of wear and compensate lateral, axial and angular shaft misalignment. The mounting on the shaft is done by clamping hubs.



The following bellow couplings are usually on stock:



Mounting by clamping excentics

The A36 and A58 encoder can be mounted with these excentrics. The BX36 and BX58 kits include 3 excentrics and 3 screws.

Required drill holes:

BX36: M2.5-screw thread, depth 5 mm, ø screw-hole circle 42 mm BX58: M3-screw thread, depth 6 mm, ø screw-hole circle 65 mm

Digital distance and speed display - WAY-D for incremental output signals

Use the WAY-D display to visualise the measured distance or the speed (tachometer) of the position transducer. A transfer of data to a PC or PLC can be done with the RS232 interface of the WAY-DR.

 Protection class:
 IP65 (front panel)

 Display:
 6 digits

 Supply:
 115 / 250 VAC

Output Linedriver L (TTL, RS422):

WAY-DS-5VH:	display only, input level TTL
WAY-DG-5VH:	display with two presets and switching outputs, input level TTL
WAY-DR-5VH:	display with serial interface RS232 / RS485, input level TTL $% \left({\left {{\rm{TTL}}} \right _{\rm{TTL}}} \right)$
Output Push-Pull G:	
WAY-DS:	display only, input level HTL
WAY-DG:	display with two presets and switching outputs, input level HTL
WAY-DR:	display with serial interface RS232 / RS485, input level HTL



For further information please see the WAY-D data sheet.



MEASURING WHEELS

Measuring wheels for measuring the length of products in movement, e.g. in the paper, metal, textile, wood or plastic industry.

Material of wheel body: aluminium Temperature range: -30...80°C

Surface of the measured	Recommended
material	Profile
Cardboard	1, 2, 3, 4, 5
Wood	1, 2, 3, 4, 5
Textile	1, 2, 3, 4
Plastics (e.g. PVC, PE,)	2, 3, 4, 5
Paper	2, 3, 4, 5
Wire, greased metals, steel profiles, leather	2
Carpet, cables, nonwoven	3
Greased metals, glass, floor coverings	4
Painted surfaces	2, 4
Rubber, soft plastic	1



Measuring Wheel	Profile	Coating	Weight	Bore	Order Code
Circumference / Ø / Width	Measuring Wheel				
	1	diamond knurl (aluminium)	60 g	10 mm	MSR-02-1
0.2 m / 0.63 7 mm / 12 mm	2	plastic (polyurethane) smooth	60 g	(6 mm	MSR-02-2
0.2 11 / 0 03.7 1111 / 12 1111	3	tufted rubber (polyurethane)	60 g	on	MSR-02-3
	4	plastic (poly urethane) corrugated	60 g	request)	MSR-02-4
	1	diamond knurl (aluminium)	775 g		MSR-05-1
0.5 m / Ø 150.2 mm / 25 mm	2	plastic (polyurethane) smooth	700 g	10 mm	MSR-05-2
0.5 m / Ø 159.2 mm / 25 mm	3	tufted rubber (polyurethane)	700 g	10 11111	MSR-05-3
	4	plastic (poly urethane) corrugated	700 g		MSR-05-4
12" / Ø 3.82" / 0.38"	5	natural rubber (NR) smooth	100 g	10 mm	MSR-12-5

SPRING ENCODER ARM

The spring encoder arm DGA-MSR is only available for encoders of the series A58 with a solid shaft \varnothing 10 mm.

- Spring encoder arm for easy mounting of a measuring wheel with Encoder
- Flexible mounting position: 9 setting positions in 40° steps
- Base plate, variable in 4 directions
- Adjustable spring pressure, max. 40 N
- Pressure for each notch approx. 20 N (first notch between 0 and approx. 20 N)
- Temperature range -40...120°C

3



Or







- Setting with a size 0 or 1 screwdriver
 3 pcs. screws M3 x 8 DIN 912 included
- 3 Measuring wheel

- 8 -

ORDER CODE A36



Bold text: standard with shorter lead time

ORDER CODE A58



Bold text: standard with shorter lead time

ACCESSORIES

SB236 for A36, the kit includes 3 excentrics and 3 screws SB256 for A36, the kit includes 3 excentrics and 3 screws SB256 for A58, the kit includes 3 excentrics and 3 screws SB256 10 m, straight connector SB268 Sm, angular connector SB258 Sm, angular connector SB268 Sm, angular connector SB268 Sm, angular connector SB268 Sm, angular connector SB268 Coupling, bore diameter: 2 x e 6 mm SB278 Sm, straight connector SB268 Sm, straight connector SB278 straight, M23 for self assembly, metal housing SB264-M2-S	Cable with connector M12, 8 poles, shielded		Clamping excentric kit		
SBPSM-S-M12 5 m, straight connector BX58 for A58, the kit includes 3 excentrics and 3 screws SBP10M-S-M12 10 m, straight connector Couplings SBP10M-SW-M12 5 m, angular connector MBK-15.523-06-06 coupling, bore diameter: 2 x ø 6 mm SBP10M-SW-M12 10 m, angular connector MBK-15.523-06-06 coupling, bore diameter: 2 x ø 6 mm SBP10M-SW-M12 10 m, angular connector MBK-20-26-10-10 coupling, bore diameter: 2 x ø 10 mm SBP10M-SW-M2 2 m, straight connector MBK-20-26-10-10 coupling, bore diameter: 2 x ø 10 mm SBP0M-SW-M2 3 m, straight connector MBK-20-26-10-10 coupling, bore diameter: 2 x ø 10 mm SBP0M-SW-M23 2 m, straight connector MBK-20-26-10-10 coupling, bore diameter: 2 x ø 10 mm SBP0M-SW-M23 1 m, straight connector MBK-20-26-10 display only WAY-DS display only WAY-DS-SVH display with two presets and switching outputs WAY-DS straight, M12 for self assembly WAY-DS display only WAY-DS angular, M12 for self assembly WAY-DS display with two presets and switching outputs WAY-DS <t< td=""><td>K8P2M-S-M12</td><td>2 m, straight connector</td><td>BX36</td><td>for A36, the kit includes 3 excentrics and 3 screws</td></t<>	K8P2M-S-M12	2 m, straight connector	BX36	for A36, the kit includes 3 excentrics and 3 screws	
G8P10M-S-M12 10 m, straight connector Couplings G8P2M-SW-M12 2 m, angular connector MBK-15.5-23-08-06 coupling, bore diameter: 2 x e 6 mm G8P10M-SW-M12 10 m, angular connector MBK-15.5-23-08-06 coupling, bore diameter: 2 x e 6 mm G8P10M-SW-M12 10 m, angular connector MBK-20-28-06-10 coupling, bore diameter: 2 x e 10 mm G8P10M-SM-M23 2 m, straight connector MBK-20-28-06-10 coupling, bore diameter: 2 x e 10 mm G8P30M-SM23 5 m, straight connector MBK-20-28-06-10 coupling, bore diameter: 2 x e 10 mm G8P30M-SM23 5 m, straight connector MBK-20-28-06-10 coupling, bore diameter: 2 x e 10 mm G8P30M-SM23 10 m, straight connector WAY-DS-SVH display only WAY-DG-SVH display only WAY-DG-SVH display with two presets and switching outputs VAY-DG-SVH display with two presets and switching outputs WAY-DR-SVH display only VBA-M12-S straight, M21 for self assembly Wath To S display with two presets and switching outputs VAY-DG-SVH display with two presets and switching outputs WAY-DR WAY-DR WAY-DR VBA-M2-S straight, M21 for self assembly WAY	K8P5M-S-M12	5 m, straight connector	BX58	for A58, the kit includes 3 excentrics and 3 screws	
SBP2M-SW-M12 2 m, angular connector Couplings GRP5M-SW-M12 5 m, angular connector MBK-15.5-23-06-06 coupling, bore diameter: 2 x ø 6 mm GRP5M-SW-M12 1 m, angular connector MBK-20-26-06-10 coupling, bore diameter: 2 x ø 10 mm GRP5M-SM23 2 m, straight connector MBK-20-26-06-10 coupling, bore diameter: 2 x ø 10 mm GRP5M-S-M23 2 m, straight connector E Unit of the second of the seco	K8P10M-S-M12	10 m, straight connector			
S8P5M-SW-M12 5 m, angular connector MBK-15.5-23-06-06 coupling, bore diameter: 2 x ø 6 mm G8P10M-SW-M12 10 m, angular connector MBK-20-26-06-10 coupling, bore diameter: 2 x ø 10 mm Cable with connector W23, 6 poles, shielded MBK-20-26-10-10 coupling, bore diameter: 2 x ø 10 mm Cable with connector S m, straight connector MBK-20-26-10-10 coupling, bore diameter: 2 x ø 10 mm Cable with connector S m, straight connector MBK-20-26-10-10 coupling, bore diameter: 2 x ø 10 mm G8P2M-S-M23 S m, straight connector W33, 6 poles, shielded W44-0C-50-10 display only G8P10M-S-M23 10 m, straight connector W34 - OC-5VH display only W44-OC-5VH display only Wating Connector M23 for self assembly, metal housing W44-OC-5VH display only W44-OC D8-G-M12-S straight, M23 for self assembly metal housing W44-OC display only W34-DC-36 1 for each additional meter (for series A36) Gaplay only W44-OC display only W34-OC-36 1 for each additional meter (for series A36) Gaplay only W47-OC display only Gabel-PVC-36 1 for each additional meter (f	K8P2M-SW-M12	2 m, angular connector	Couplings		
SRP10M-SW-M12 10 m, angular connector MBK-20-26-06-10 coupling, bore diameter: a 6 mm, a 10 mm S2able with connector 2 m, straight connector MBK-20-26-06-10 coupling, bore diameter: 2 x a 10 mm S2able with connector 3 m, straight connector BigItal display 1 channel, Linedriver L (input level TL, R\$42) G8P5M-SA23 10 m, straight connector WAY-DS-5VH display with two presets and switching outputs Wating Connector W3, 12 poles, shielded WAY-DS-5VH display with serial interface RS232 / RS485 SCON12-S straight, M23 for self assembly, metal housing Digital display 1 channel, Push-Pull G Wating Connector M2, 8 poles, shielded WAY-DS display with serial interface RS232 / RS485 SCON12-S straight, M12 for self assembly WAY-DS display only WAY-DS angular, M12 for self assembly WAY-DS display with wo presets and switching outputs WAY-DS 1 for each additional meter (for series A36) wAY-DR display with wo presets and switching outputs WSR-02-1 diamond knurt (aluminium) GGA-MSR Spring encoder arm (only for encoders A58 with solid shaft 9 10 WSR-02-2 plastic (polyurethane) smooth GGA-MSR Spring encoder arm (only for encoders A58 w	K8P5M-SW-M12	5 m, angular connector	MBK-15.5-23-06-06	coupling, bore diameter: 2 x ø 6 mm	
Cable with connector W33, 8 poles, shielded MBK-20-26-10-10 coupling, bore diameter: 2 x e 10 mm Cable with connector 2 m, straight connector Digital display 1 channel, Linedriver L (input level TTL, R\$422) (8P50M-S-M23) 0 m, straight connector WAY-DS-SVH display only (8P10M-S-M23) 10 m, straight connector WAY-DG-SVH display with two presets and switching outputs (WAY-DG-SVH display with serial interface RS232 / RS485 WAY-DG-SVH display only (S0000C) W32, 5 poles, shielded WAY-DG-SVH display only (S0000C) straight, M23 for self assembly, metal housing Digital display 1 channel, Push-Pull G (S0000C) straight, M12 for self assembly WAY-DG display only (S0000C) straight, M12 for self assembly WAY-DG display with wo presets and switching outputs (S0000C) anguar, M12 for self assembly WAY-DG display with wo presets and switching outputs (Sabel-PVC-S8) 1 for each additional meter (for series A36) WAY-DG display with serial interface RS232 / RS485 (Sabel-PVC-S8) 1 for each additional meter (for series A58) DCA-MSR WAY-DG (Sabel-PVC-S8) 1 for each additional meter (for seri	K8P10M-SW-M12	10 m, angular connector	MBK-20-26-06-10	coupling, bore diameter: ø 6 mm, ø 10 mm	
Cable with connector W33, 8 poles, shielded Image: Straight connector G8P2M-S-M23 2 m, straight connector Digital display 1 channel, Linedriver L (input level TL, R5422) G8P3M-S-M23 5 m, straight connector WAY-DS-SVH display only G8P3M-S-M23 5 m, straight connector WAY-DS-SVH display with two presets and switching outputs Kating Connector K33, 12 poles, shielded WAY-DG-SVH display with serial interface RS232 / RS485 CAN12-S straight, M23 for self assembly, metal housing Digital display 1 channel, Push-Pull G WAY-DS-SVH display only WAY-DS Wating Connector M12 for self assembly WAY-DS Wath Connector M12 for self assembly WAY-DS WAY-DS-SVH display with two presets and switching outputs WAY-DS angular, M12 for self assembly WAY-DS WAY-DS display with serial interface RS232 / RS485 WAY-DR Cabel-PVC-S6 1 for each additional meter (for series AS6) WAY-DR display with serial interface RS232 / RS485 WASR-02-1 glamord knurf (aluminium) DGA-MSR Spring encoder arm (only for encoders AS8 with solid shaft Ø 10 WSR-02-2 plastic (polyurethane)			MBK-20-26-10-10	coupling, bore diameter: 2 x ø 10 mm	
K8P2M-S-M23 2 m, straight connector K8P5M-S-M23 5 m, straight connector K8P5M-S-M23 10 m, straight connector K8P10M-S-M23 10 m, straight connector WAY-DS-SVH display only WAY-DS-SVH display with two presets and switching outputs WAY-DS-SVH display with two presets and switching outputs WAY-DS-SVH display with serial interface RS232 / RS485 CON012-S straight, M23 for self assembly, metal housing Wating Connector W23, B poles, shielded D36-G-M12-S straight, M12 for self assembly WAY-DS display only WAY-DS display only WAY-DS algopa only	Cable with conne	ctor M23, 8 poles, shielded			
SR85M-S-M23 5 m, straight connector Digital display 1 channel, Linedriver L (input level TL, RS422) K8P10M-S-M23 10 m, straight connector WAY-DS-5VH display only WAY-DG-SVH display with two presets and switching outputs WAIting Connector W23, 12 poles, shielded WAY-DG-5VH display with serial interface RS232 / RS485 CON012-S straight, M23 for self assembly, metal housing Digital display 1 channel, Push-Pull G Wating Connector W2, 8 poles, shielded WAY-DS display only 0a-G-M12-S straight, M12 for self assembly WAY-DS display only 0a-G-M12-S angular, M12 for self assembly WAY-DS display with serial interface RS232 / RS485 Extended cable for cable output (2m is standard) WAY-DG display with serial interface RS232 / RS485 Kabel-PVC-36 1 for each additional meter (for series A56) WAY-DR wisplay with serial interface RS232 / RS485 WSR-02-1 diamond knurl (aluminium) MSR-02-2 plastic (polyurethane) smooth DGA-MSR WSR-02-3 tufted rubber (polyurethane) Gimend knurl (aluminium) Gimend knurl (aluminium) WSR-05-1 diamond knurl (aluminium) Gimend knurl (aluminium) Gimend knurl (al	K8P2M-S-M23	2 m, straight connector			
K8P10M-S-M23 10 m, straight connector WAY-DS-5VH display only Wating Connector Maxing Connector WAY-DG-5VH display with two presets and switching outputs CON012-S straight, M23 for self assembly, metal housing WAY-DS-5VH display with serial interface RS232 / RS485 CON012-S straight, M23 for self assembly, metal housing Digital display 1 chamel, Push-Pull G WAY-DS display only wAY-DS D8-G-M12-S straight, M12 for self assembly WAY-DS D8-G-M12-S angular, M12 for self assembly WAY-DS D8-G-M12-S angular, M12 for self assembly WAY-DS WAY-DS display with two presets and switching outputs WAY-DR VB-C-M2-S angular, M12 for self assembly WAY-DR display with serial interface RS232 / RS485 Extended cable for cable output (2m is standard) WAY-DR display with serial interface RS232 / RS485 MAY-DR WSR-02-1 diamond knurl (aluminium) DGA-MSR MSR-02-1 diamond knurl (aluminium) DGA-MSR WSR-02-2 plastic (polyurethane) Guamond knurl (aluminium) MSR-02-1 diamond knurl (aluminium) Guamond knurl (aluminium) WSR-02-2	K8P5M-S-M23	5 m, straight connector	Digital display 1 cl	nannel, Linedriver L (input level TTL, RS422)	
Wating Connector W23, 12 poles, shielded WAY-DG-5VH display with two presets and switching outputs Wating Connector W23, 12 poles, shielded WAY-DR-5VH display with serial interface RS232 / RS485 CON012-S straight, M23 for self assembly, metal housing Digital display 1 chamel, Push-Pull G Wating Connector M12, 8 poles, shielded WAY-DS display only D8-G-M12-S straight, M12 for self assembly WAY-DS display only D8-G-M12-S angular, M12 for self assembly WAY-DS display with wo presets and switching outputs WAY-DRS angular, M12 for self assembly WAY-DS display with wo presets and switching outputs WAY-DRS angular, M12 for self assembly WAY-DS display with wo presets and switching outputs WAY-DRS angular, M12 for self assembly WAY-DS display with wo presets and switching outputs WAY-DRS angular, M12 for self assembly WAY-DR display with wo presets and switching outputs WAY-DRS 1 for each additional meter (for series A36) WAY-DR display with serial interface RS232 / RS485 WSR-02-1 diamond knurl (aluminium) DGA-MSR DGA-MSR MSR-02-1 WSR-02-2 plastic (polyurethane) corrugated	K8P10M-S-M23	10 m, straight connector	WAY-DS-5VH	display only	
Wating Connector W23, 12 poles, shielded WAY-DR-5VH display with serial interface RS232 / RS485 CON012-S straight, M23 for self assembly, metal housing Digital display 1 -b-nnel, Push-Pull G Wating Connector W12, 8 poles, shielded WAY-DR display only D8-G-M12-S straight, M12 for self assembly WAY-DR display only D8-G-M12-S angular, M12 for self assembly WAY-DR display with wo presets and switching outputs WAY-DR display with serial interface RS232 / RS485 WAY-DR display with serial interface RS232 / RS485 Extended cable for cable output (2m is standard) WAY-DR display with serial interface RS232 / RS485 Kabel-PVC-S8 1 for each additional meter (for series A36) WAY-DR display with serial interface RS232 / RS485 WASP-D2-1 diamond knurl (aluminium) DGA-MSR Spring encoder arm (only for encoders A58 with solid shaft Ø 10 WSR-02-2 plastic (polyurethane) smooth DGA-MSR Spring encoder arm (only for encoders A58 with solid shaft Ø 10 WSR-02-3 tufted rubber (polyurethane) smooth Spring encoder arm (only for encoders A58 with solid shaft Ø 10 WSR-05-1 diamond knurl (aluminium) Spring encoder arm (only for encoders A58 with solid shaft Ø 10 WSR-05-2 </td <td></td> <td></td> <td>WAY-DG-5VH</td> <td>display with two presets and switching outputs</td>			WAY-DG-5VH	display with two presets and switching outputs	
CON012-S straight, M23 for self assembly, metal housing Wating Connector W12, 8 poles, shielded Digital display 1 channel, Push-Pull G D8-G-M12-S straight, M12 for self assembly WAY-DS display only D8-G-M12-S angular, M12 for self assembly WAY-DS display only D8-G-M12-S angular, M12 for self assembly WAY-DG display with wo presets and switching outputs WAY-DR display with serial interf ace RS232 / RS485 WAY-DR display with serial interf ace RS232 / RS485 Extended cable for cable output (2m is standard) WAY-DR display with serial interf ace RS232 / RS485 Kabel-PVC-58 1 for each additional meter (for series A36) For each additional meter (for series A58) Measuring wheels Mamond knurl (aluminium) DGA-MSR MSR-02-1 diamond knurl (aluminium) DGA-MSR MSR-02-2 plastic (polyurethane) smooth DGA-MSR MSR-02-3 tufted rubber (polyurethane) For each additional meter (for series A58) MSR-02-1 diamond knurl (aluminium) DGA-MSR MSR-02-2 plastic (polyurethane) corrugated For each additional meter (for series A58) MSR-05-3 diamond knurl (aluminium) <t< td=""><td>Mating Connector</td><td>r M23, 12 poles, shielded</td><td>WAY-DR-5VH</td><td>display with serial interface RS232 / RS485</td></t<>	Mating Connector	r M23, 12 poles, shielded	WAY-DR-5VH	display with serial interface RS232 / RS485	
Wating Connector H12, 8 poles, shielded Digital display 1 charlel, Push-Pull G D8-G-M12-S straight, M12 for self assembly WAY-DS display only D8-W-M12-S angular, M12 for self assembly WAY-DG display with two presets and switching outputs D8-W-M12-S angular, M12 for self assembly WAY-DR display with serial interface RS232 / RS485 Extended cable for cable output (2m is standard) WAY-DR display with serial interface RS232 / RS485 Kabel-PVC-36 1 for each additional meter (for series A36) For each additional meter (for series A58) For each additional meter (for series A58) WSR-02-1 diamond knurl (aluminium) DGA-MSR For encoders A58 with solid shaft Ø 100 WSR-02-1 diamond knurl (aluminium) DGA-MSR For encoders A58 with solid shaft Ø 100 WSR-02-1 diamond knurl (aluminium) DGA-MSR For encoders A58 with solid shaft Ø 100 WSR-02-1 diamond knurl (aluminium) GSA-MSR For encoders A58 with solid shaft Ø 100 WSR-02-2 plastic (polyurethane) corrugated For encoder additional meter (For encoders A58 with solid shaft Ø 100 WSR-05-3 tufted rubber (polyurethane) For encoder additional meter (For encoders A58 with solid shaft Ø 100	CON012-S	straight, M23 for self assembly, metal housing			
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	MSR-12-5	natural rubber (NR) smooth			

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