QG series

Family overview Inclination

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Family:	QG30	QG40	QG40N	QG40N Redundant	QG65N2 / QG76N2 analog	QG65D / QG76D analog Dynamic
Product life cycle status	for new designs	for new designs	for new designs	for new designs	for new designs	for new designs
Remarks					Two models: standard / high accuracy	Two models: standard / high accuracy
Measuring range	±10° ±30° ±90°	±10° ±30° ±90°	±10° ±30° ±90° 360°	±90° 360°	±10° ±30° ±90° 360°	±10° ±30° ±90° 360°
Number of axis	1	2	2 1	1	2 1	2 1
Zero adjustment function	no	no	yes	yes	yes	yes
Functional safety	no	no	no	full redundant	no	no
Supply Voltage	10- 30 Vdc / 5 Vdc	10- 30 Vdc / 5 Vdc	10- 30 Vdc	10- 30 Vdc	approx. 10- 32 Vdc	approx. 10- 32 Vdc
Output format	4-20mA | 0.5-4,5V Vcc=5V: 0-5V ratiometric	4-20mA | 0.5-4,5V Vcc=5V: 0-5V ratiometric	4-20mA | 0.5-4,5V	4-20mA	4-20mA | 0-10V	4-20mA | 0-10V
Output bandwidth	0 - 10Hz	0 - 10Hz	0 - 10Hz	0 - 10 Hz	0 - 10Hz	0 - 50Hz
Output function	sinus curve	sinus curve	lineair	lineair	lineair	lineair
Resolution	0,03°	0,03°	0,1°	0,1°	0,01°	0,01°
Accuracy (typ. @20°C)	0,3° 0,6° 0,9° (-45° . . +45°) offset error excluded, 1° typ.	0,3° 0,6° 0,9° (-45° . . +45°) offset error excluded, 1° typ.	0,5°	0,5°	± 0,2° 2σ (high accuracy) up to 0,1° (standard accuracy)	± 0,2° 2σ (high accuracy) up to 0,1° static, 0,8° dynamic (standard accuracy)
Temperature coefficient (typ.)	0,02°/K	0,02°/K	0,04°/K	0,08°/K	0,1°/K over full Temperature range (high accuracy) 0.02°/K (standard accuracy)	0,1°/K over full Temperature range (high accuracy) 0.02°/K (standard accuracy)
Housing material	Plastic	Plastic	Plastic	Plastic	QG65: Reinforced plastic with steel fiber QG76: Stainless steel	QG65: Reinforced plastic with steel fiber QG76: Stainless steel
Size	30x30x15mm	40x40x25mm	40x40x25mm	40x40x25	QG65: 60x50x27mm QG76: 70x60x33mm	QG65: 60x50x27mm QG76: 70x60x33mm
Temperature range	-25 . . +80°C	-40 . . +80°C	-40 . . +80°C	-25 . . +80°C	-40 . . +80°C	-40 . . +80°C
Protection class	IP67	IP67, IP69K	IP67, IP69K	IP67	QG65: IP67, IP69K QG76: IP67, IP69K (IP68 with gland/cable)	QG65: IP67, IP69K QG76: IP67, IP69K (IP68 with gland/cable)
Certification	CE	CE, UL	CE, UL	CE	QG65: CE, UL QG76: CE, UL	QG65: CE, UL QG76: CE, UL
Programmable	no	no	Yes, with optional configurator	Yes, with optional configurator	factory programmable	factory programmable
Connection standard	PVC cable 2m	M12 5-pole male	M12 5-pole male	2m PUR cable	M12 male 5p	M12 male 5p
Options:	Different output formats (i.e. 0-5V, 0-10V, 0,5-4,5V etc), bandwidths, subranges, cables, connectors M12 8-pole etc.					

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QG series

Family overview Inclination

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Family:	QG65N2/QG76N2 CANopen/J1939			QG65N/QG76N CANopen Safety SIL CL 2/PLd			QG65D/QG76D CANopen/J1939 Dynamic		
Product life cycle status	for new designs			for new designs			for new designs		
Measuring range	±30°	±90°	360°	±30°	±90°	360°	±30°	±90°	360°
Number of axis	2		1	2		1	2		1
Zero adjustment function	yes			yes			yes		
Functional safety	no			SIL CL 2 / PLd certified			no		
Supply Voltage	10 - 32 Vdc			8 - 32 Vdc			8 - 32 Vdc		
Output format	CANopen / SAE J1939			CANopen & CANopen Safety			CANopen / SAE J1939		
Output bandwidth	0 - 10Hz			0 - 10Hz			0 - 50Hz		
Output function	lineair			lineair			lineair		
Resolution	Programmable 0,01° (default) / 0,1° / 1°			0,05°			Programmable 0,01° (default) / 0,1° / 1°		
Accuracy (typ. @20°C)	0,07° (high accuracy) 0,15° (standard accuracy)			0,15°			0.07° static, 0.5° dynamic (high accuracy) 0,15° typ static, 0,8° dynamic (standard accuracy)		
Temperature coefficient (typ.)	0.003°/K (high accuracy) 0.015°/K (standard accuracy)			0,02°/K			0.003°/K (high accuracy) 0.015°/K (standard accuracy)		
Housing material	QG65: Reinforced plastic with steel fiber / QG76: Stainless steel								
Size	QG65: 60x50x27mm / QG76: 70x60x33mm								
Temperature range	-40 . . +80°C								
Protection class	QG65: IP67, IP69K / QG76: IP67, IP69K (IP68 with gland/cable)								
Certification	CE, UL, Automotive EMC, E4ready			QG65: CE, UL, Automotive EMC			CE, UL, Automotive EMC, E4ready		
Programmable	CANopen: by DIS Configurator set CAN and CAN opject dictionary J1939: No			Yes, via CAN object dictionary			CANopen: by DIS Configurator set CAN and CAN opject dictionary J1939: No		
Connection standard	M12 5p male & optional female (internal T-junction)								
Options:	Different CAN settings, cable with gland, connectors etc.								

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