

Inclination sensors / Tilt switch sensors															page 1/2					rev3.1 20160408				
Family	QG30			QG40			QG40N				QG65 / QG76 analog													
Measuring range	±10°	±30°	±90°	±10°	±30°	±90°	±10°	±30°	±90°	up to 360°		±10°	±30°	±90°	±15°	30 . . 360°								
Max. # of axis	1			2			2		1		2			1										
Switching output	no			no			2x NPN / 2x PNP 150mA				2x NPN / 2x PNP 100mA													
Centering function	no			no			yes				yes													
Redundant	no			no			optional, 1-axis 360°, 4-20mA				no													
Output format	4-20mA / 0.5-4,5V			4-20mA / 0.5-4,5V			4-20mA / 0.5-4,5V				4-20mA / 0.5-4,5V (also CAN: see page 2)													
Output bandwidth	0 - 10Hz			0 - 10Hz			0 - 10Hz				0 - 10Hz													
Output function	Output = x + y*(sin(α))			Output = x + y*(sin(α))			Output = x + y*(α)				Output = x + y*(α)													
Resolution	0,03°			0,03°			0,1°				0,01°		0,004°		0,01°									
Accuracy (typ.)	0,3°	0,6°	0,9° (-45° . . +45°)	0,3°	0,6°	0,9° (-45° . . +45°)	0,5°				0,04°	0,04°	0,08° (-45 . . +45°)	0,02°	0,07°									
	offset error excluded, 1° typ.			offset error excluded, 1° typ.							0,04°		0,04°		0,08° (-45 . . +45°)		0,02°		0,07°					
Temp. coefficient (typ.)	0,01°/K			0,01°/K			0,04°/K				0,005°/K													
Housing material	Plastic PBTP			Plastic PBTP			Plastic PBTP				Reinforced plastic Faradex steel fiber filled / Alu / Stainless steel													
Size	30x30x15mm			40x40x25mm			40x40x25mm				60x50x24mm / 60x50x27mm / 70x60x33mm													
Temp. range	-25 . . +85°C			-25 . . +85°C			-25 . . +85°C				-40 . . +85°C°													
Protection class	IP67			IP67			IP67				IP67 / IP68 / IP69K													
Certification	CE optional: UL (M8 connector output) optional: cTUVus (PUR cable output)			CE optional: UL (M12 connector output) optional: cTUVus (PUR cable output)			CE optional: UL (M12 connector output) optional: cTUVus (PUR cable output)				CE / Automotive EMC optional: UL													
Filed configurator	not possible			not possible			optional available				optional available													
Connection standard	PVC cable 2m			PVC cable 2m			PUR cable 2m				QG65: M12 male 8p / QG76: Gland + cable													
Options:	Different output formats, bandwidths, ranges, cables, connectors, positioning pins etc.																							

Inclination sensors / Tilt switch sensors											page 2/2			rev3.1 20160408		
Family	QG65 / QG76 CANopen			QG65X	QG65N / QG76N CANopen			QG65N / QG76N CANopen Safety SIL CL 2/PLd								
Measuring range	±30°	±90°	360°	360°	±30°	±90°	360°	±30°	±90°	360°						
Max. # of axis	2		1	1	2		1	2		1						
Switching output	no			no	no			no								
Centering function	yes (CAN object dictionary)			yes (CAN object dictionary)	yes (CAN object dictionary)			yes (CAN object dictionary)								
Redundant	no			no	no			yes, SIL CL 2 / PLd								
Output format	CANopen			CANopen	CANopen			CANopen & CANopen Safety								
Output bandwidth	0 - 10Hz			0 - 10Hz	0 - 10Hz			0 - 10Hz								
Output function	Output = x + y*(α)			Output = x + y*(α)	Output = x + y*(α)			Output = x + y*(α)								
Resolution	0,01°			0,001°	0,01°			0,01°								
Accuracy (typ.)	0,04°	0,06° (-45 .. +45°)	0,06°	0,04° over full Temp. Range (Active Temp. Comp.)	0,09°	0,15° (-45 .. +45°)	0,09°	0,09°	0,15° (-45 .. +45°)	0,15°						
Temp. coefficient (typ.)	0,005°/K			0 (-20° to +60°C)	0,009°/K			0,009°/K								
Housing material	Reinforced plastic steel fiber filled / Alu / Stainless steel															
Size	60x50x24mm / 60x50x27mm / 70x60x33mm															
Temp. range	-40 .. +85°C															
Protection class	IP67 / IP68 / IP69K															
Certification	CE / Automotive EMC optional: UL			CE optional: UL	CE / Automotive EMC / E4 type approval optional: UL			CE / Automotive EMC optional: UL								
Connection standard	QG65: M12 5p male (optional + female, internal T-junction). QG76: Gland + cable or optional M12 1x/2x															
Options:	Different CAN default settings, cable with gland, connectors, positioning pins etc.															