gSENS TLT-C CAN
Inclination sensor for mobile machines

Applications

- Mobile Cranes
- Reach Stackers
- Boom Trucks
- Knuckle Boom

gSENS TLT-C CAN inclination sensor

Special Features

- Relative linearity error <0.1% FS over entire measuring range
- Good damping behavior, no effect on gravity influence
- Seawater resistance
- IP67 protection rating
- Low temperature drift

Description

Inclination sensors detect the orientation angle of an object in relation to the gravitational field of the earth. The fields of application for these sensors are diverse. In cranes or mobile elevating work platforms (MEWP), the inclination angle of the booms is measured to calculate whether the machine stays within the safety regulations specified by the manufacturer.

The sensor has a measuring range of up to 360° and offers an extraordinarily high accuracy and precision over the entire measuring range. The measured value resolution is 0.1°.

With its IP67 protection rating and aluminum housing, the sensor withstands even the harshest environmental conditions, e.g. seawater.

www.wika-mc.com

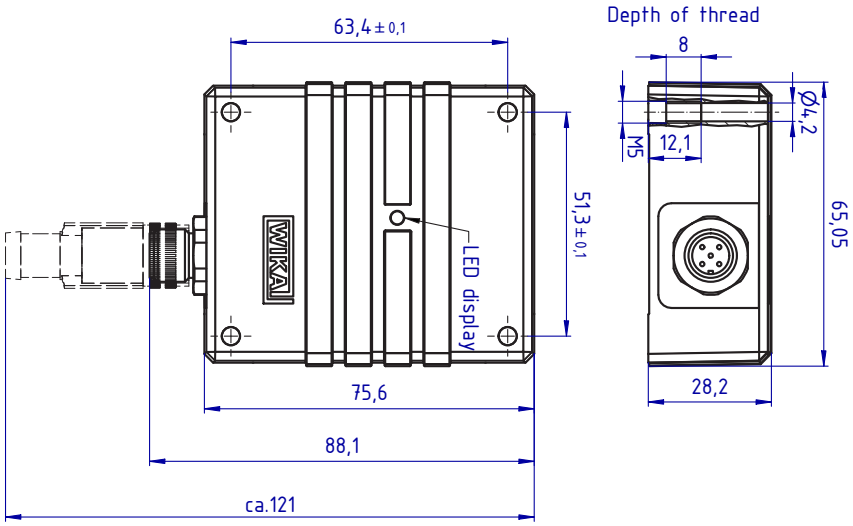
WIKA Mobile Control GmbH & Co. KG
Hertzstraße 32-34 · 76275 · Ettlingen · Germany
Tel. +49 7243 709-0 · sales.wmc@wika.com

WIKA Mobile Control, LP
1540 Orchard Drive · Chambersburg, PA · USA
Tel. +1 717-217-2200 · sales.us.wmc@wika.com

Technical Specifications

gSENS TLT-C CAN	gSENS WGC compatible mode	TLT-C (extended setup)
Measuring range	-180°…180°, zero position factory preset	
Relative linearity error	<0.1% FS	
Resolution	0.01°	0.01° (adjustable acc. to CiA 410)
Cross slop error ≤±5° full measuring range	<0.2°	
Temperature drift	0.002% FS/K	
Dynamic behavior	Special filter, backward compatible mode	FIR filter 5 Hz cutoff frequency
Recommended measuring rate	10 Hz	
Operating temperature	-40°…+70°C	
Electrical connection	M12x1	
Output signal	CANopen (CiA-DS301, CiA-DS410), LSS acc. to CiA-DS 305	
Terminal resistor	120 Ohm, available and switchable via CAN command	
Supply voltage	8…54 VDC (starting from 7 VDC)	
Power consumption	approx. 38 mA at 12 VDC, approx. 21 mA at 24 VDC	
Protection rating	IP67 IP69K when mounted on a mounting plate (see below), a cable with a corresponding sealed mating connector must be connected to the M12 round connector	
Shock (EN 60068-27)	Class 5M3 acc. to EN 60721-3-5:1997 or higher 80g, 6ms, 100 shock, half-sine	
Vibration (EN 60068-6)	Class 5M3 acc. to EN 60721-3-5:1997 or higher 5-11Hz, +/-10mm, 11-2000Hz ,10g, 1 Octave/min, 20 sweeps per axis	
CE marking	EN 61000-6-2 (interference immunity industry) EN 61000-6-4 (interference emission industry) EN 61000-6-3 (interference emission household) RoHS	
Housing material	Aluminum, coated (seawater resistance grade)	

Dimensions

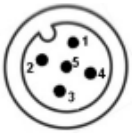


www.wika-mc.com

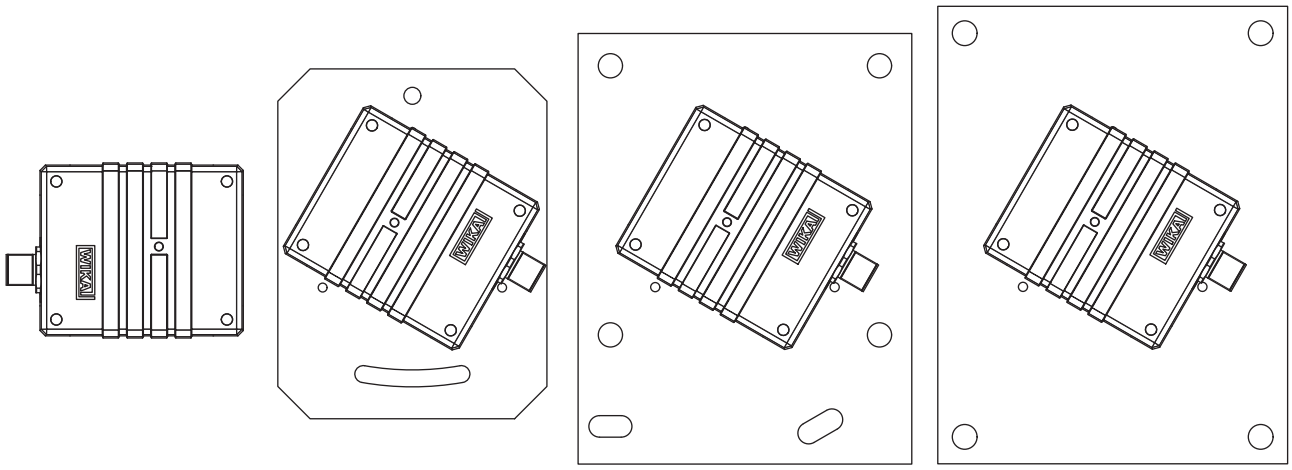
WIKA Mobile Control GmbH & Co. KG
Hertzstraße 32-34 · 76275 · Ettlingen · Germany
Tel. +49 7243 709-0 · sales.wmc@wika.com

WIKA Mobile Control, LP
1540 Orchard Drive · Chambersburg, PA · USA
Tel. +1 717-217-2200 · sales.us.wmc@wika.com

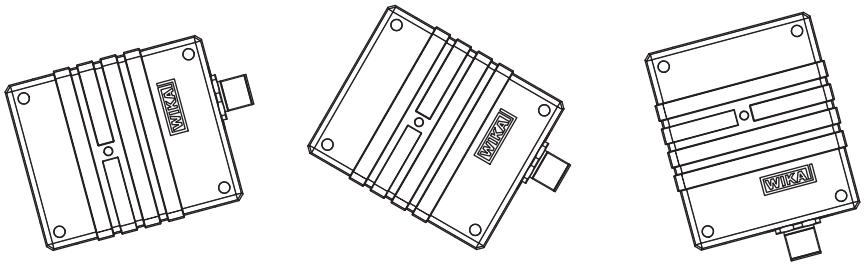
Pin Assignment stand-alone sensor

Pin Assignment	5 pin M12 male	Signal
	1	CAN shield = housing
	2	+UB Operating voltage DC (+)
	3	0 V Operating voltage DC (-)
	4	CAN High
	5	CAN Low

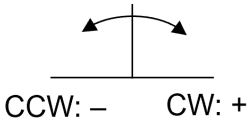
Available Mounting Options



Orientation



-45° Position **-0° Position** **+45° Position**



www.wika-mc.com

WIKA Mobile Control GmbH & Co. KG
Hertzstraße 32-34 · 76275 · Ettlingen · Germany
Tel. +49 7243 709-0 · sales.wmc@wika.com

WIKA Mobile Control, LP
1540 Orchard Drive · Chambersburg, PA · USA
Tel. +1 717-217-2200 · sales.us.wmc@wika.com

Product Code and Variants

	GSENS	TLT_	-	C	-	00	_	XXX	/	XXXX	-	XX	/	XX	-	XXX	/	XXX	-	XXX	-	XX	-	X	X	X	X	X	W	XXX
Product																														
Inclination sensor		TLT																												
Technology																														
Capacitive				C																										
Safety																														
Non-safety						00																								
Measuring range																														
360°								360																						
180°								180																						
90°								090																						
Specific								###																						
Type (+ consecutive number)																														
gSENS WGC-compatible, CAN										25##																				
Extended setup, CiA 410, CAN										28##																				
Output signal																														
CANopen												C1																		
Hardware revision																														
Consecutive number														##																
Angle range																														
Positive angle range																###														
Negative Angle Range																		###												
Connector																														
Cable 0.3m + JST plug (socket) 7-pin																				J03										
M12 round plug (male), 5-pin (on housing)																				R02										
Accuracy class																														
0.3%																						03								
Resolution																														
0.1°																								2						
0.01°																								3						
Terminating resistos																														
Without terminating resistor																									I					
With terminating resistor																									R					
Filter																														
Kalman default setup (2,00 / 0,12) - standard																										K				
FIR 5 Hz cutoff frequency																										A				
Baudrate																														
125 kbit/s																											1			
250 kbit/s																											2			
500 kbit/s																											3			
1000 kbit/s																											4			
Heartbeat																														
100 ms																												1		
250 ms																												2		
500 ms																												3		
1000 ms																												4		
PDO event time																														
10 ms																													1	
50 ms																													2	
100 ms																													3	
500 ms																													4	
1000 ms																													5	
Logo																														
WIKA logo																													W	
Node ID (decimal)																														
Standard																														127
Specific (e.g. 081, 087, etc.)																														###

www.wika-mc.com

WIKA Mobile Control GmbH & Co. KG
Hertzstraße 32-34 · 76275 · Ettlingen · Germany
Tel. +49 7243 709-0 · sales.wmc@wika.com

WIKA Mobile Control, LP
1540 Orchard Drive · Chambersburg, PA · USA
Tel. +1 717-217-2200 · sales.us.wmc@wika.com