

GTS35 / GTS45 gear tooth sensor



- Sensing of position, speed and direction of ferrous gear wheels
- Up to 2 mm sensing gap
- Operating temperature range from -40 °C to +140 °C
- Output signal frequency from 0.1 Hz to 20,000 Hz
- Protection against overvoltage, reverse polarity, ESD

Technical specifications

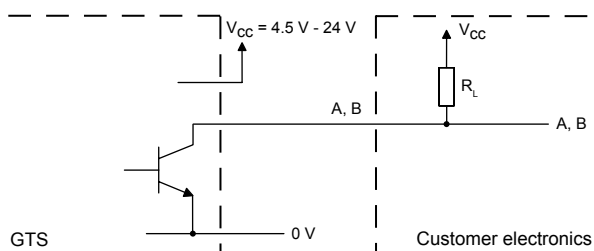
System data	
Gear wheel module (m) (at 0° yaw)	GTS35 1.25 mm
	GTS45 1.4 mm
Applicable gear wheel module	0.8 mm to 1.6 mm
Sensing gap	0.2 mm to 2 mm
Electrical data	
Power supply V_{cc}	4.5 V to 24 V – reverse polarity protected
Power consumption	< 20 mA
Output signals	Digital, Open Collector
Output saturation voltage	< 0.6 V (at $I_o = 40$ mA of output current)
Environmental conditions	
Temperature	Operating and storage -40 °C to +140 °C
ESD protection	EN 61000-4-2; 15 kV R / ±8 kV contact
EMC standards	EN 61000-6-2, EN 61000-6-3

Digital output signals, Open Collector NPN

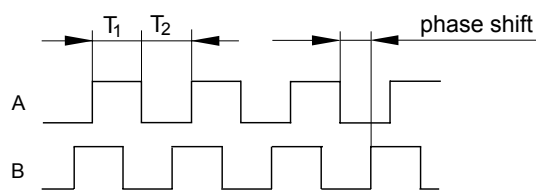
Square wave output

Output signals	A, B
Duty cycle of output signals (T_1/T_2)	0.6 to 1.7
Phase shift	90° ± 40°
Maximum load	$R_L > V_{cc} / 40$ mA
Cable	Standard 100 mm, other lengths per request AWG22 (4 × 0.35 mm ²), UL94-V0
Connector	4-pin plug, male Moulded on cable, compatible with AMP Superseal 282106-1, mating connector: AMP 282088-1 (not provided)

Recommended signal termination

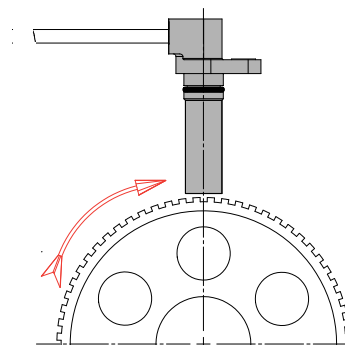


Timing diagram



B leads A for clockwise rotation of the gear wheel.

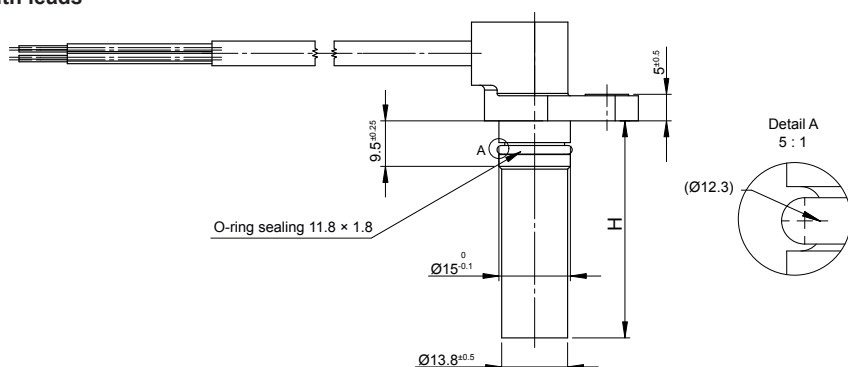
Clockwise rotation of the gear wheel



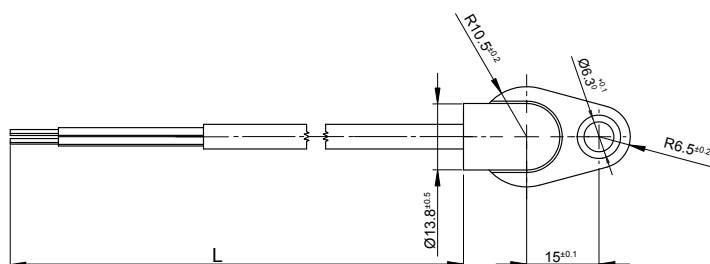
Dimensions

Dimensions and tolerances in mm.

With leads



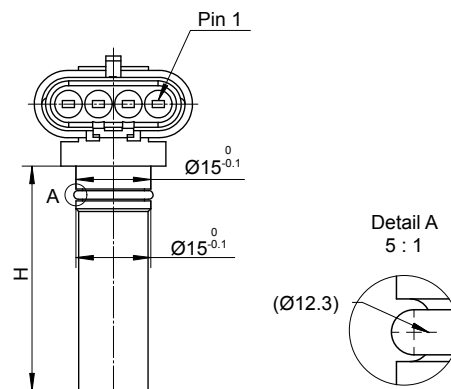
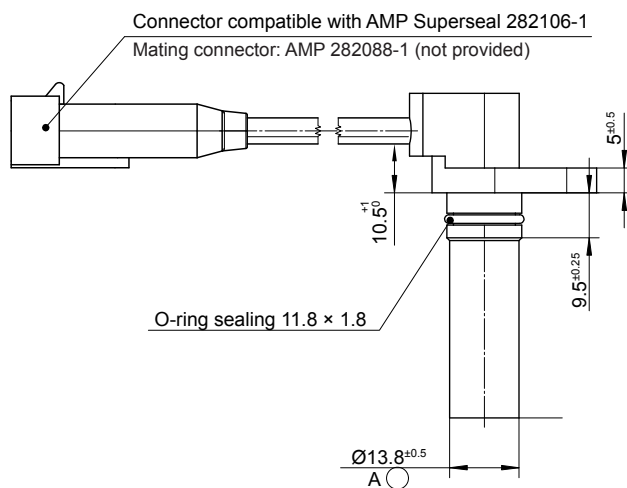
Sensor	H
GTS35	35 mm
GTS45	45 mm



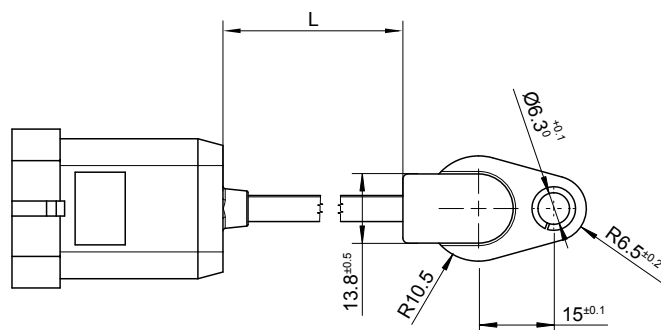
Connections

Colour	Signal
Red	V _{dd}
Blue	B
White	A
Black	GND

With connector



Type	H
GTS35	35 mm
GTS45	45 mm

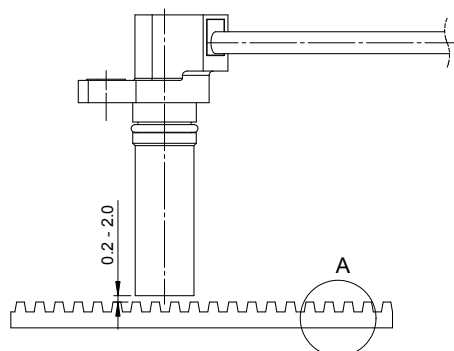


Connections

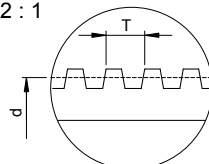
Pin	Signal
1	V _{dd}
2	B
3	A
4	GND

Installation drawing

Dimensions and tolerances in mm.



Detail A
2 : 1



Module calculation

$$m = \frac{d}{z}$$

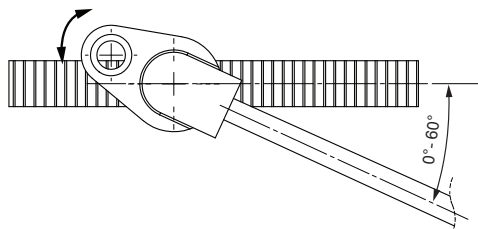
Pitch calculation

$$T = \pi \times m$$

d = Diameter (mm)
z = Number of teeth
m = Module (mm)
T = Pitch (mm)

NOTE: Gear tooth wheel not provided.

Adjustment for other modules



Depending on the yaw angle (0° to 60°) of the GTS sensor gear wheels with modules from 0.8 mm to 1.6 mm can be used.

At 0° yaw:

Sensor	Module (m)
GTS35	1.25 mm
GTS45	1.4 mm

Ordering code

	GTS35	A	10	F	00	
Type						Special requirements
GTS35 - H = 35 mm						00 - None (standard)
GTS45 - H = 45 mm						
Option						Connector option
A - Standard						A - 4-pin plug, male
						F - No connector (flying leads)
Cable length (L)						
10 - Standard, 100 mm						

Contact us

RLS merilna tehnika d.o.o.
Poslovna cona Žeje pri Komendi
Pod vrbbami 2
SI-1218 Komenda
Slovenia

T +386 1 5272 100
F +386 1 5272 129
E mail@rls.si
www.rls.si