

Technical data**Universal Tilt Sensor - Gyro****Application**

The UTS-G belongs to the Parker family of accessories provided to complement electronic control systems. The UTS-G is a multi-axis, MEMS technology tilt sensor for mobile hydraulic applications. The sensor communicates over a CAN bus using SAE J1939 protocol and has an integral Deutsch connector. The UTS-G is an enhanced version of the standard UTS with gyroscopic compensation that meets increasing mobile equipment requirements for dynamic performance monitoring. Other properties we focus on are stability, reliability, electromagnetic immunity, and ease of installation.

Properties**Reliability**

The UTS-G has a glass-filled, hybrid plastic construction for sturdiness and corrosion resistance. The sensor is very robust and able to withstand rugged applications. The electronics are protected from moisture with a conformal coating, and the enclosure is sealed against harsh environments using spin-weld technology. These features give the sensor IP68/IP69K protection for exposed outdoor applications.

Electromagnetic immunity

The design of the UTS-G has a high level of EMI protection.

Installation

This design allows for the use of standard ¼" or M6 bolts for mounting. The 3 mounting holes are in a tripod pattern to facilitate a mistake proof installation reducing overall manufacturing time. The 4 pin connector is a sealed Deutsch DT type designed for automotive use. These features provide for easy installation and removal, even in field conditions.

Environmental protection**EMI**

ISO 11452-2	100 V/m
ISO7637-2 and -3	transients
EN 61000-6-2 and 6-4	conducted disturbance
ISO 13766:2010	radiated emission
ISO 14982:2009	radiated emission

ESD

ISO 10605:2008	±15 kV
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Mechanical

Shock	1m drop
Vibration	40 Gs

General

Weight	0.14 kg
Temperature (operating)	-40°C to 85°C
Temperature (storage)	-40°C to 105°C
Number of axes	3 (X/Y/Z) or 2 (SSI2)
Angular range	±90° (X/Y/Z)
Pitch range	±180° (SSI2)
Roll range	±90° (SSI2)

Communication

CAN protocol	SAE J1939
CAN messages	see part drawing
CAN bus speed	250 k, up to 500 k
Data broadcast rate	50 Hz, up to 200 Hz
CAN source address	0xE4

Mechanical characteristics

Mounting bolt	1/4"-20 UNC or M6x1.0
Mounting torque	135 in-lb max
Mounting surface	flatness .010"
Connector	Deutsch DT

Electrical specifications

Operating voltage	6 - 36 Vdc
Startup voltage	5.25 Vdc (20 ms max)
Reverse polarity	-48 Vdc
Short circuit protection	-VBAT and 48 Vdc
Current draw	19.0 mA (12 V) 18.0 mA (24 V)
Tilt resolution	0.01°/BIT
Pitch/Roll resolution	0.00003°/BIT
Static repeatability	0.05°
Static accuracy (pitch/roll)	±0.3° typical
Dynamic accuracy (pitch/roll)	±0.5° typical
Starting time	50 ms max.
Settling time	100 ms

Ordering part number

UTS-G	163161ECD
Steel shield	165361ECD

Climate

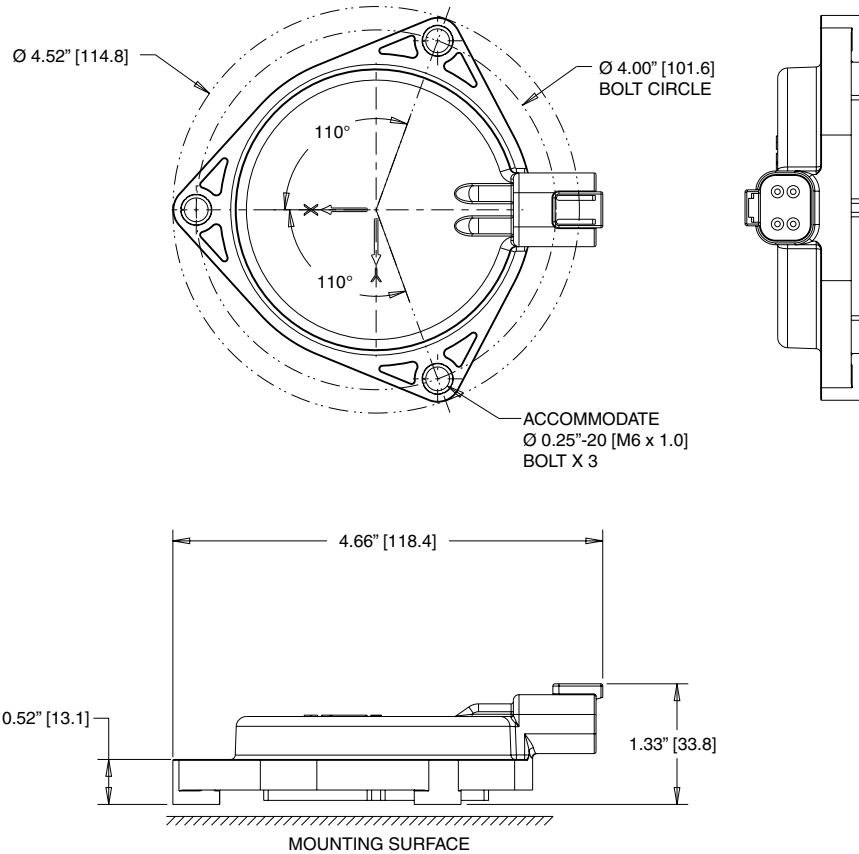
Sealing	IP68 / IP69K
(with rear connector protection, such as backshell)	

Chemical

Liquids (resistance)	standard automotive
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Markings and Approvals

CE	2014/30/EU EMC 2011/65/EU RoHS2
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This product can expose you to chemicals including ANTIMONY TRIOXIDE, CARBON BLACK (AIRBORNE, UNBOUND PARTICLES OF RESPIRABLE SIZE) which is known to the State of California to cause cancer and 4,4'-(PROPANE-2,2-DIYL)DIPHENOL, BPA, P,P'-ISOPROPYLDIENE BISPHENOL, which is known to the State of California to cause birth defects or other reproductive harm.

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