



Universal Tilt Sensor (UTS) Tilt Sensors

Catalog HY33-2374/US



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Technical data**Application**

The UTS (universal tilt sensor) belongs to the Parker family of accessories provided to complement electronic control systems. The UTS is a multi-axis, MEMS (micro electro-mechanical systems) technology, tilt sensor for mobile hydraulic applications. The sensor communicates over a CAN bus using SAE J1939 protocol. The UTS has an integral Deutsch connector. To make the sensor suitable for mobile equipment, we have focused upon properties such as reliability, electromagnetic immunity and ease of installation.

Properties**Reliability**

The UTS 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 protection for exposed outdoor applications.

Electromagnetic immunity

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

Installation

The UTS is well designed for the mobile hydraulics industry. The 4 pin connector is a sealed Deutsch DT type designed for automotive use. The 3 mounting holes are in a tripod pattern to facilitate level installation. 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

ESD

ISO 10605:2008	±15 kV
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Mechanical

Shock	1m drop
Vibration	40 Gs

Climate

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

Chemical

Liquids (resistance)	standard automotive
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Universal Tilt Sensor**General**

Weight	0.14 kg
Temperature (operating)	-40°C to 85°C
Temperature (storage)	-40°C to 105°C
Number of axes ¹	2 or 3
Angular range ¹	±10° or ±90°

Communication

CAN protocol	SAE J1939
CAN messages	see part drawing
CAN bus speed	250 kbps
Data broadcast rate	10 Hz (±10°)
Data broadcast rate	50 Hz (±90°)
CAN source address	0xE2

Mechanical characteristics

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

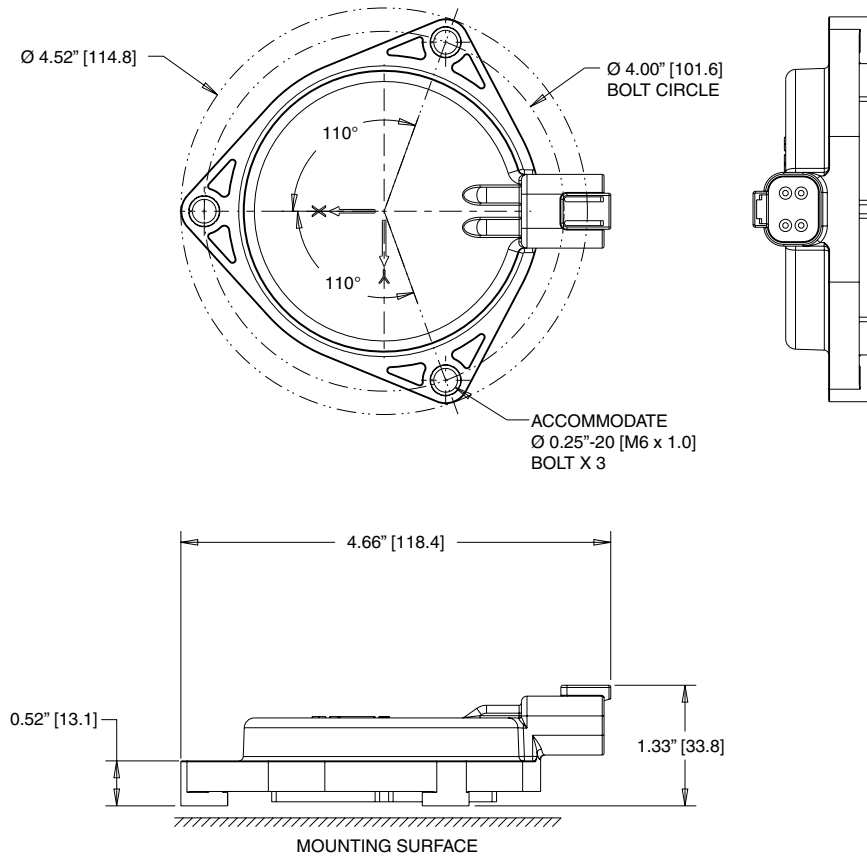
Electrical specifications

Operating voltage	5.25 - 48 Vdc
Startup voltage	6.5 - 36 Vdc
Reverse polarity	-48 Vdc
Short circuit protection	32 Vdc or ground
Current draw	9.0 mA (12 V) 6.0 mA (24 V)
Resolution	0.02°
Repeatability	0.05°
Linearity (typical)	±0.4°, (±10°) ±0.3° + 1% of tilt from horizontal, (±90°)

Ordering part number

UTS v2, ±10°, 2 axis	162703ECD ²
UTS v2, ±90°, 2 axis	160736ECD
UTS v2, ±90°, 3 axis	159456ECD

¹ depending on part number
² supersedes p/n 151938ECD



WARNING - USER RESPONSIBILITY

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