

## Digison Ultrasonic Sensors

- High Accuracy
- Intelligence Built In
- IP68 Rating/NEMA 6P
- 3m-20m Range
- Temperature Compensation
- Narrow Beam Angle
- Encapsulated Sensor
- Unique Radial Ultrasonic Crystal
- Excellent Chemical Resistance



The Digison range of intelligent ultrasonic sensors manufactured by Smart Storm range from high accuracy, high resolution devices for precision flow measurement, to robust high power devices for liquid and solid level measurement. Manufactured in PVC or PVDF, the sensors are resistant to most chemicals and hostile environments.

**Intelligence:** All Digison sensors contain powerful Field Programmable Gate Array (FPGA) processors which are renowned for robust performance and excellent durability. Unique to the Digison range of sensors is the ability to return a real time ultrasonic echo direct to the USI controller for viewing and setup. The user has direct control over the sensor via the USI screen rather than through a laptop or oscilloscope. Programmable options allow:

- Tank mapping
- Echo tracking
- Echo cancellation and discrimination from false echoes
- Noise suppression
- Digital filtering
- Variable echo transmit and return power

**High Resolution and data speed:** The Digison 3 & 6 offer resolution of less than a millimetre and data capture of less than 1 second which means for flow applications both instantaneous flow rate and daily totalised flow are truly representative and highly accurate.

**Narrow Beam Angle:** All Digison sensors generate a beam angle of only 6 degrees meaning narrow vessels and apertures can be used meaning the risk of false echoes from tank walls, seams and welds and other interfering objects such as internal ladders are reduced.

Integral Temperature compensation: All Digison sensors have integral temperature compensation to allow for ultrasonic time of flight variations due to temperature (~0.7% per degree centigrade). Changes in time of flight are automatically compensated for in the sensor electronics so the distance measured is always the true distance. The Digison 3 is available with a reflective plate which enables even higher accuracy for flow measurement.

Parameter	Digison 3	Digison 6	Digison 10	Digison 20
Range *	3m	6m	10m	20m
Minimum Range - Dead Band	200mm	250mm	300mm	500mm
Blanking Distance	User programmable	User programmable	User programmable	User programmable
Gain Control	User programmable	User programmable	User programmable	User programmable
Frequency	170KHz	80KHz	60KHz	40KHz
Cable Length	5m	10m	12m	20m
Operating Temperature	-30°C to + 60°C	-30°C to + 60°C	-30°C to + 60°C	-30°C to + 60°C
Beam Angle @3dB	6 degrees	6 degrees	6 degrees	6 degrees
Accuracy	0.2% of measured distance	0.2% of measured distance	0.3% of measured distance	0.3% of measured distance
Resolution	<1mm	<1mm	<2mm	<2.5mm
Temperature Compensation	Automatic with Manual Override	Automatic with Manual Override	Automatic with Manual Override	Automatic with Manual Override
Real Time Echo Profiling	Viewable in all instruments	Viewable in all instruments	Viewable in all instruments	Viewable in all instruments
Maximum Cable Length to Instrument – 6 Core twisted pairs	1Km	1Km	1Km	1Km
Body Material	PVC, Optional PVDF	PVC, Optional PVDF	PVC, Optional PVDF	PVC, Optional PVDF
IP Rating	IP65	IP65	IP65	IP65
Mounting	DN150 Flange or ring mount	DN150 Flange or ring mount	DN150 Flange or ring mount	DN150 Flange or ring mount

Range: The above ranges relate to liquids at ambient temperatures. High temperatures, dust, solids, steam will all reduce the operational range. Consult Smart Storm for advice.