



INNOVATION AWARD
FINALIST, ONS 2016



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FINALIST, IET 2016



SPOTLIGHT ON NEW
TECHNOLOGY 2017

High Power Pinless Subsea Connector

WiSub's disruptive pinless connector solutions are creating new possibilities for the safe and reliable transfer of power and data underwater. Patented high-speed data transfer capabilities have been combined with high power in Torden™ which transfers 1000 Watts of power across a gap.



Connecting freedom
Misalignment tolerance
360° continuous rotate
Infinite mating cycles



Data + Power Transfer
From 100 Mbps
Ethernet & serial data formats
Fibre optic & copper interfaces



Standardized interface
Genderless mating faces
No pin-count
Flexible mounting features
Latching & packaging options

DATA TRANSFER

Data Rate

100 Mbps¹³

Data Type

Ethernet and Serial (RS232, RS422, RS485)²

POWER TRANSFER

Power input

24 VDC, Reverse polarity protected, or
115-264 VAC/150-350 VDC

Power output⁴

24 VDC \pm 10%, 1000W

Distance

0 to 10 mm

MECHANICAL PROPERTIES

Torden Transmitter (Tx)

Torden Receiver (Rx)

Weight in air

20 kg

23 kg

Weight in seawater

9 kg

13 kg

Housing

Aluminum⁵

Aluminum⁵

Encapsulation

PBOF⁶

PBOF⁶

¹ Options include video or customer-specified data format

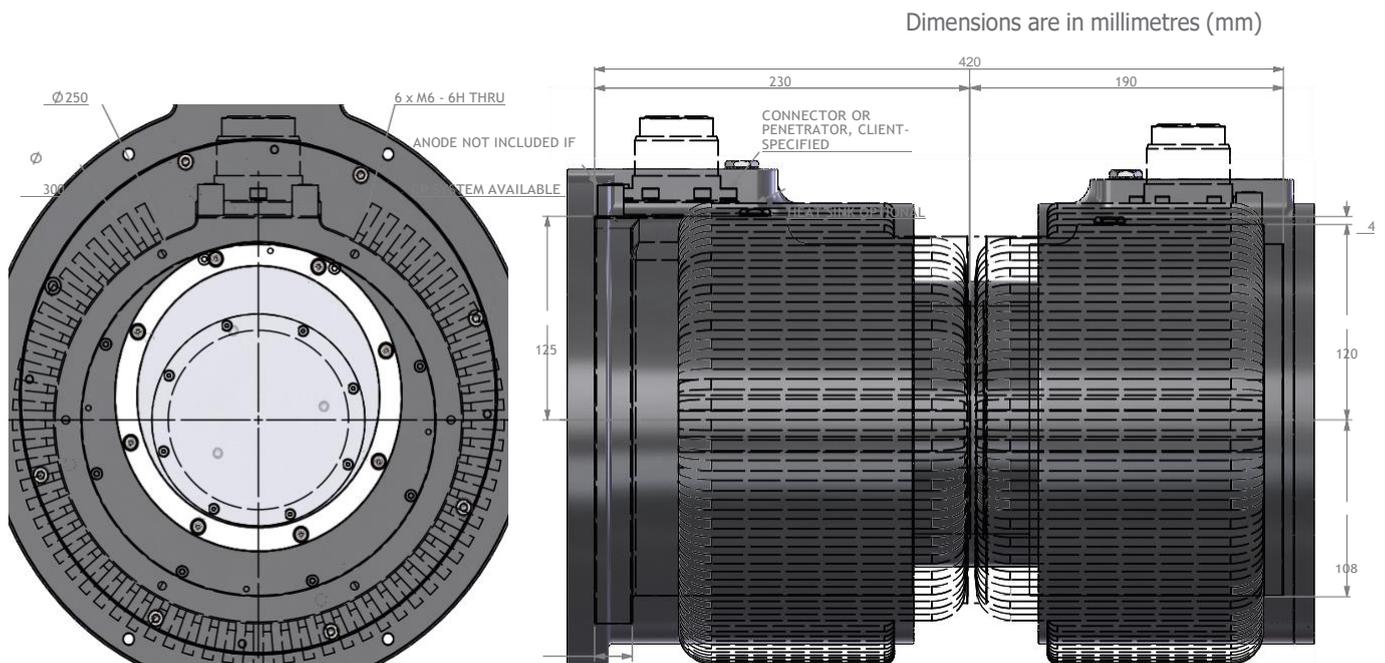
² Bandwidth is shared between data types; maximum serial baudrate 230 kbps

³ Note that combined misalignments, water salinity level and temperature will affect data transfer performance

⁴ Customer-defined power requirements can be accommodated, including alternative voltage output (e.g. 12 VDC, 48 VDC)

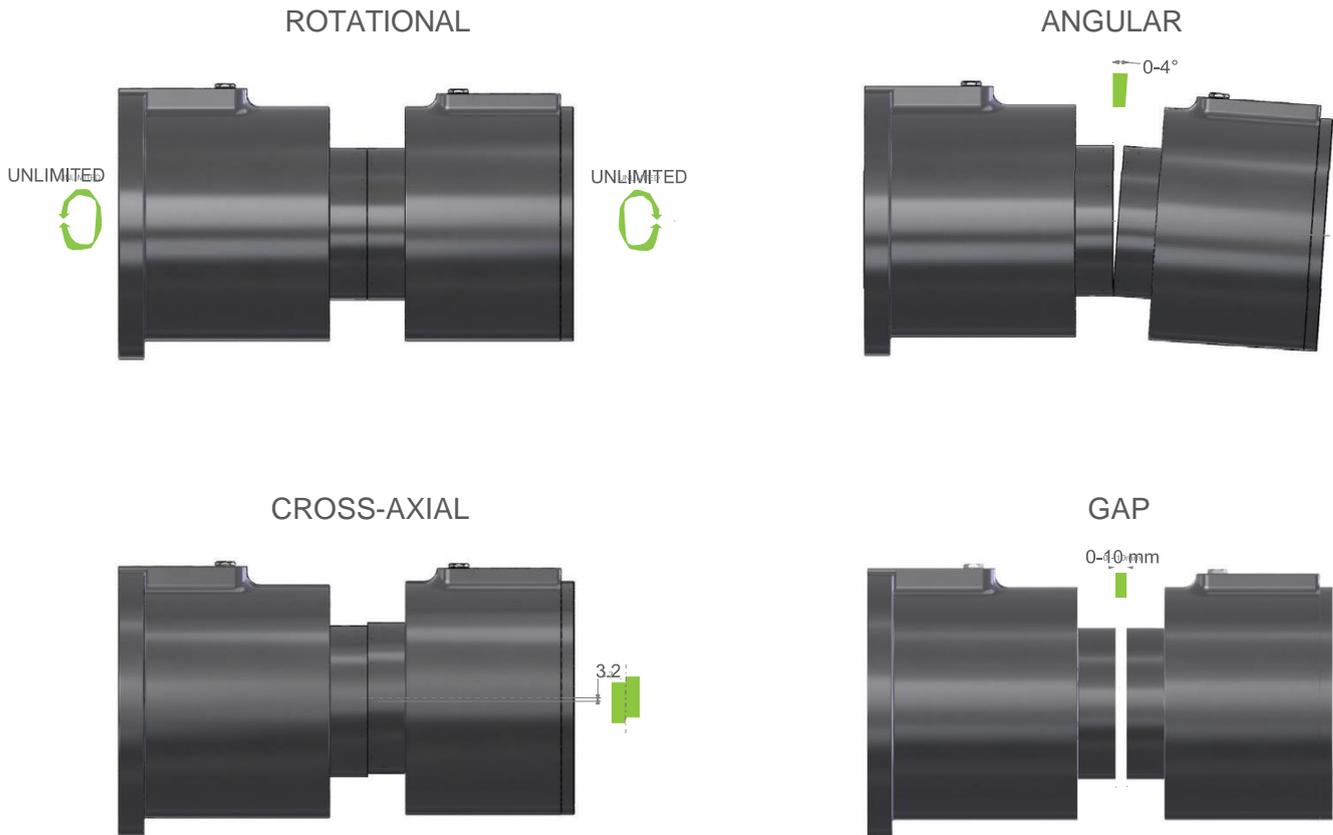
⁵ Customer-specified materials for housing are possible including 316 or Duplex SS, beryllium copper or titanium

⁶ Pressure-balanced, oil-filled with DC200 silicone oil



Flexible Operational Tolerances

WiSub pinless connectors overcome sub-millimeter tolerances to offer centimeter tolerances on your subsea connection applications, enabling subsea solutions never before possible with pinned connectors.



Comparative Advantages

WiSub pinless connectors transfer data through seawater at much higher data rates than many other existing non-contact subsea communications methods, being based on WiSub-patented high-speed, high-frequency microwave electronics vs. low-frequency RF, inductive or acoustic technologies. Advantages over legacy “plug-in” wet-mate connectors include galvanic separation, alignment freedom, immunity against seal contamination and unlimited mating cycles.

WiSub pinless connectors are unaffected by acoustic disturbance and turbidity, or by marine growth that might affect optical systems. Driving electronics and transducers are optimized for through-water transmissions. Low-frequency inductive power transfer and high-frequency data transfer solutions peacefully co-existing without interference.

Strength through Collaboration

WiSub has developed solutions in partnership with industry, academia and government. If our products do not match your current needs, please contact us with your requirements and perhaps learn what's coming down the line. Development of next-generation product is ongoing.



TORDEN™

As the secret of the runes unlocked insight and ability in Norse mythology, WiSub is on the journey to unlock the secret of pinless underwater connection by delivering relevant product and co-developing innovative applications with our customers.

WiSub's pinless subsea connection systems are delivered through different products which have been named after powerful weather phenomenon mentioned in the old Norse sagas.

The word Torden means "thunder", both word and product receiving their name from Thor, the hammer-wielding god that the Vikings believed caused thunder and lightning.



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