



SPOTLIGHT ON NEW
TECHNOLOGY 2015

High Performance Pinless Subsea Connector

WiSub's patented data transfer technology attains never-before achieved speeds in pinless connection, starting with a 100Mbps transparent Ethernet & serial interface. The convergence of this disruptive solution with proprietary inductive coupling has resulted in a flexible connection solution delivering unlimited wet-mate cycles and loose mating tolerances, enabling the development of new opportunities for underwater equipment manufacturers and operators.

MAELSTROM™

\māl-strəm\ TĤĤ'ĤRŦĤ



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 (via microwave link)

Power requirement	1W minimum, 1,5W peak
Input Voltage	24 vdc
Data Rate	100 Mbps ¹
Data Type	Ethernet and Serial (RS232, RS422, RS485) ¹
Seawater Gap	0 to 30 mm ^f

POWER TRANSFER (via inductive link)

Power input	24 VDC, Reverse polarity protected
Power output ^r	24 VDC +0/-5%, 48W
Distance	0 to 10 mm

MECHANICAL PROPERTIES

	Maelstrom Transmitter (Tx)	Maelstrom Receiver (Rx)
Weight in air	1.3 kg	1.3 kg
Weight in seawater	1.1 kg	1.1 kg
Housing	Aluminum ⁿ	Aluminum ⁿ
Encapsulation	Epoxy and Polyurethane ^k	Epoxy and Polyurethane ^k

¹Options include video or customer-specified data format

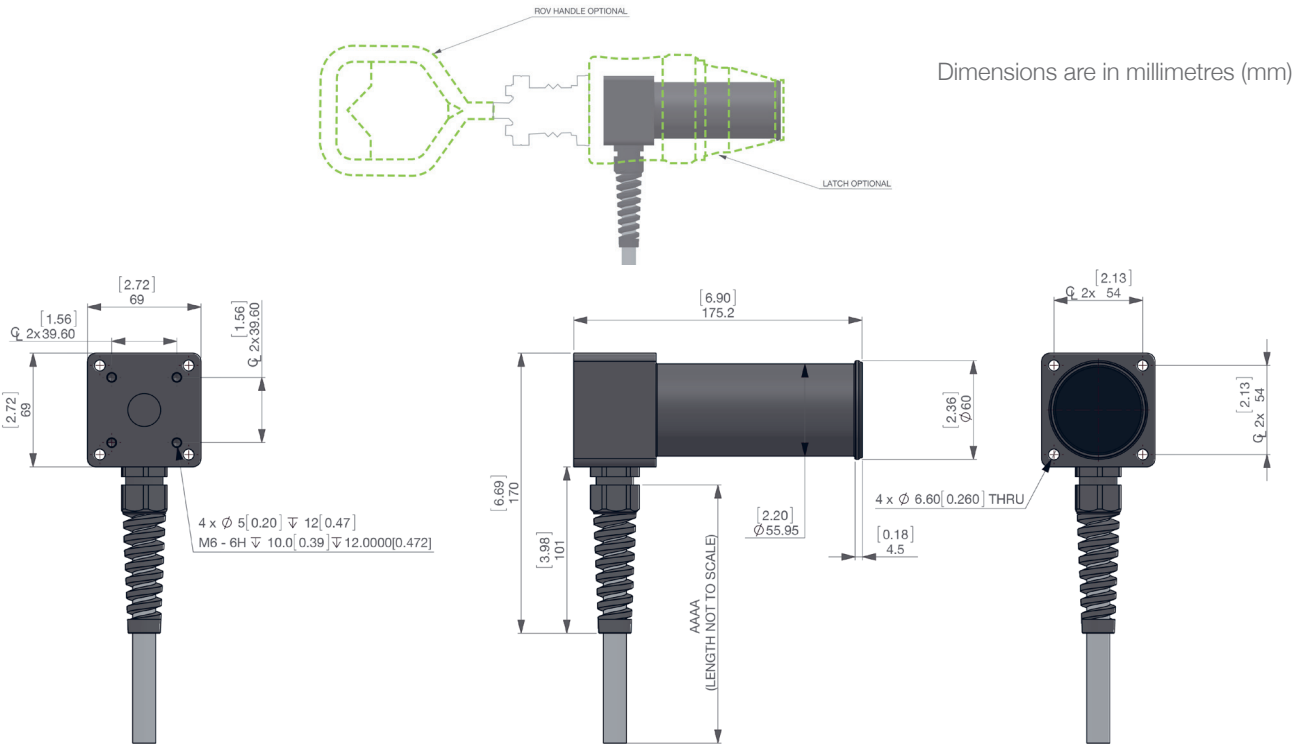
¹ Bandwith is shared between data types; maximum serial baudrate 230 kbps. Note that combined misalignments, water salinity level and temperature will affect data transfer performance.

^f Increased gap is possible with decreased data throughput, up to 60 mm at 1 Mbps (data-only operation).

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

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

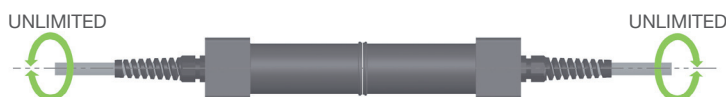
^k Alternative encapsulations available e.g. atmospheric or PBOF (pressure-balanced, oil-filled)



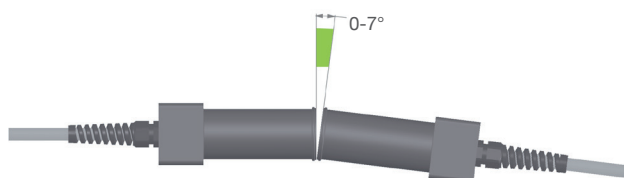
Flexible Operational Tolerances

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.

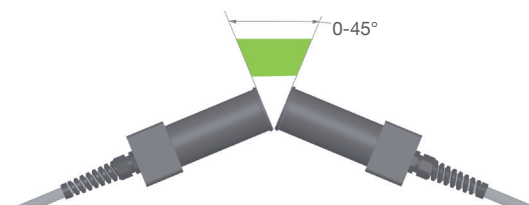
Rotational Alignment Tolerance



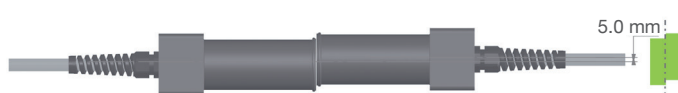
Angular Misalignment Tolerance POWER



Angular Misalignment Tolerance DATA



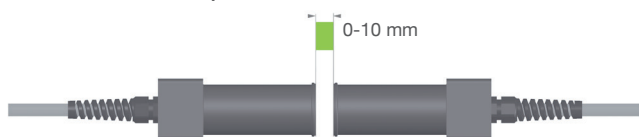
Cross Axis Tolerance POWER



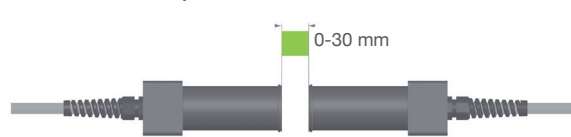
Cross Axis Tolerance DATA



Gap Tolerance POWER



Gap Tolerance DATA



Comparative Advantages

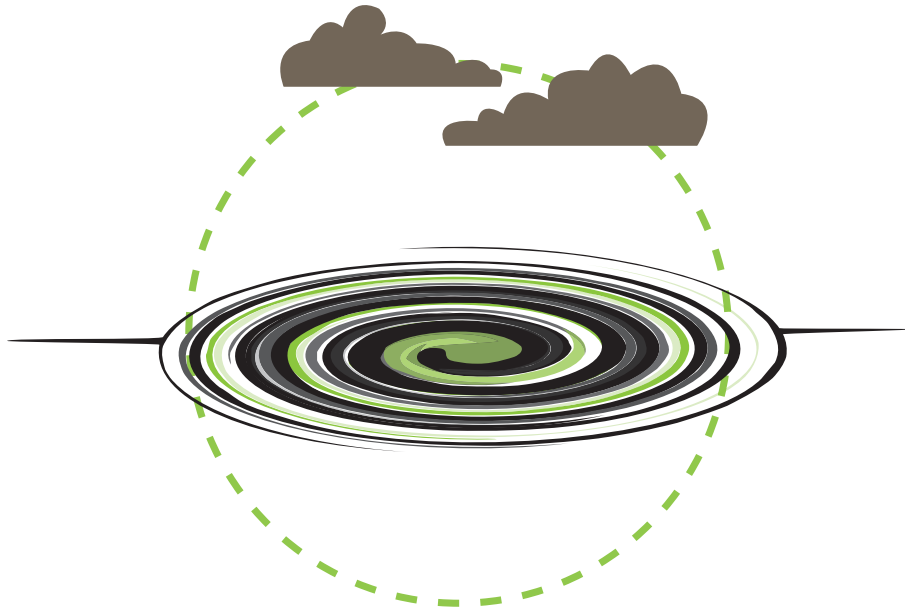
WiSub pinless connectors transfer data through seawater at much higher data rates than many other existing non-contact subsea communications methods, being based on WiSub-patented high-speed, high-frequency microwave electronics vs. low-frequency RF, inductive or acoustic technologies.

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.



MAELSTROM™

\ˈmāl-strəm\ 𐌖𐌰𐌚𐌰𐌱𐌰𐌹𐌸

As the secret of the runes unlocked insight and ability in Norse mythology, WiSub is unlocking the secret of pinless underwater connection by delivering innovative applications together 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.

Maelstrom means "mill stream" from the mythical whirlpool created by the millstone that salts the ocean. The name Maelstrom also belongs to WiSub's first award-winning subsea pinless connector, a product based on disruptive technology that is changing the way we work underwater.



main +47 56 12 38 00
fax +47 55 61 09 19
info@wisub.com

Nedre Åstveit 12
5106 Øvre Ervik
Bergen, Norway
www.wisub.com