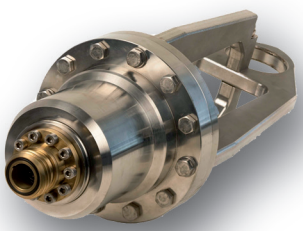
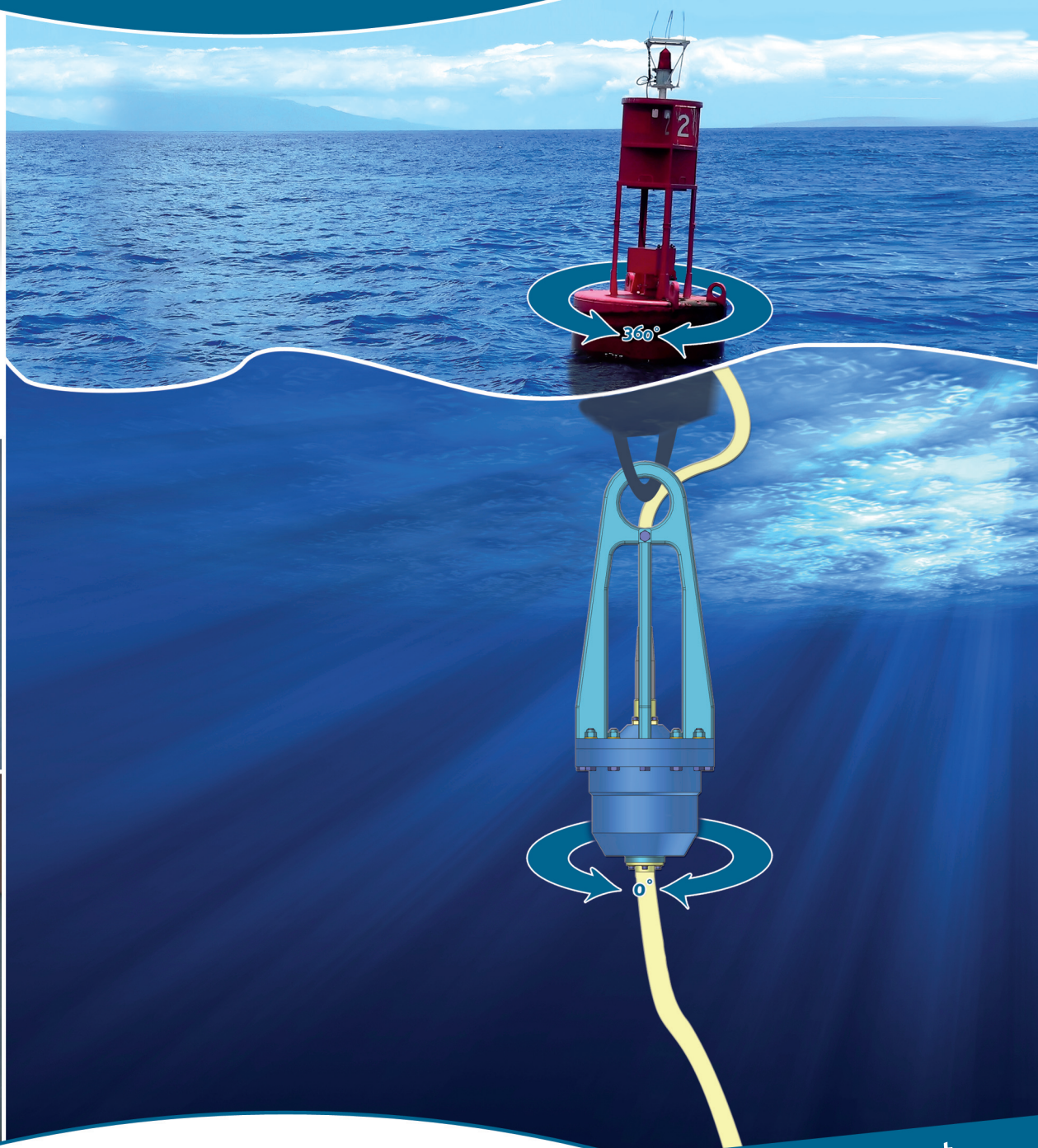
# WIRBELCON©

The WIRBELCON© is a 7-pole connector for applications under water up to 500 m. The vertical axis of rotation is turnable in both sides and transmits a tensile force of more than 10 tons. The intgrated slip rings have a current load rating up to 15 A.






tensile force of more than 10 t

endless turnable

JOWO

SYSTEMTECHNIK GmbH

Marine - Oceano products - Military

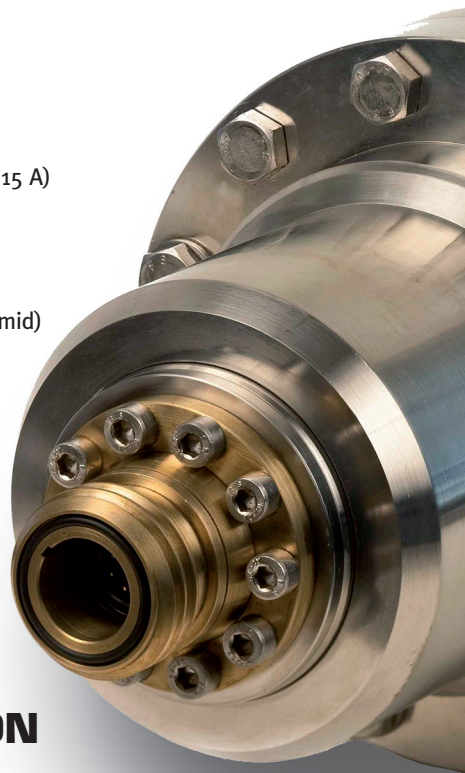
# WIRBELCON©

## Mechanical Data

| | |
|---|---|
| Material shell | 1.4571 acc. to DIN EN10088-3 |
| Material flange | 2.0966 (CuAl10Ni5Fe4 Marinebronce) |
| Weight | ca. 33 kg |
| Length | ca. 500 mm |
| Diameter | ca. 220 mm |

## Electrical Data

| | |
|---|---|
| Layout | 07-14 (Imax = 15 A) |
| Cable<br>Insulated wires | 9 x 1,5 mm² |
| Strength | 150000 N (Aramid) |
| Insulation | TPE |
| Outer jacket | PUR |
| Operating voltage | 600 V |
| Weight | 500 g/m |



## INNOVATION FOR SECURE DATA TRANSMISSION

Climate change forces us to look closely for ways of recording potential changes with precision. In other words, precise environmental analyses require large quantities of data which need to be recorded systematically and reliably. Cable is one of the most secure means of transmission for this.

In the sea particularly cables are heavily exposed to all types of weather conditions and currents but also to the sea water itself. In particular the torsional forces brought about by tidal currents put such extreme stress both on the cables and their joints that they are destroyed in a short space of time. This can result not only in uncontrolled rotational movements but also very strong tensile force with in excess of < 15 t (150,000 N) tensile stress.

JOWO - Systemtechnik GmbH has used its vast experience to develop a rotator as a solution. What was required was a connector which is able to transmit mechanical force and electrical Signals without an additional bearing cable being necessary. Therefore the cable simultaneously represents both the electromechanical bearing and connection element. It is a completely encapsulated rotating joint which can be used at a water depth of up to 500 m.

The rotational movements of 360° in any direction are able to simultaneously absorb tensile stress of < 15 t with an angular deviation of up to 15°. No additional strain relief in the form of steel cables is required. Inside this rotator electrical data are transmitted in the form of 7 galvanically isolated and pressure-proof contacts. These transmission units allow transmission of data as well as power supply of as much as I = 15 A.

The cable designed for this connector is watertight transversally and longitudinally. The mechanical construction is designed in such a way that both shock and vibrations allow forceneutral electrical transmission.

The electrical interfaces in the upper and lower section of the rotator are created by means of connectors. These connections can be operated manually despite the high tensile strength of the rotator. Special screw couplings ensure the connectors are not loosened unintentionally during Operation.

Using this innovation, given the name WIRBELCON, buoys or other movable measuring Systems can be operated directly. Should the user need to increase the number of data transmission Channels, this would be possible by making a modification. It has already been tested in the North Sea and can be used wherever dynamic processes are either inevitable or cannot be ruled out in the marine technology being used.

As a member of the Maritime Cluster Schleswig-Holstein and the GMT (German Association for Marine Technology), the Company has for many years been working with many scientific institutions in Schleswig-Holstein, which is founded on innovations and also continues to support them.

The advancement of science and industry into ever-increasing ocean depths also require the further development of electrical and fibre-optic connection technology so as to create the conditions for the use of many electrically operating instruments and sensors.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