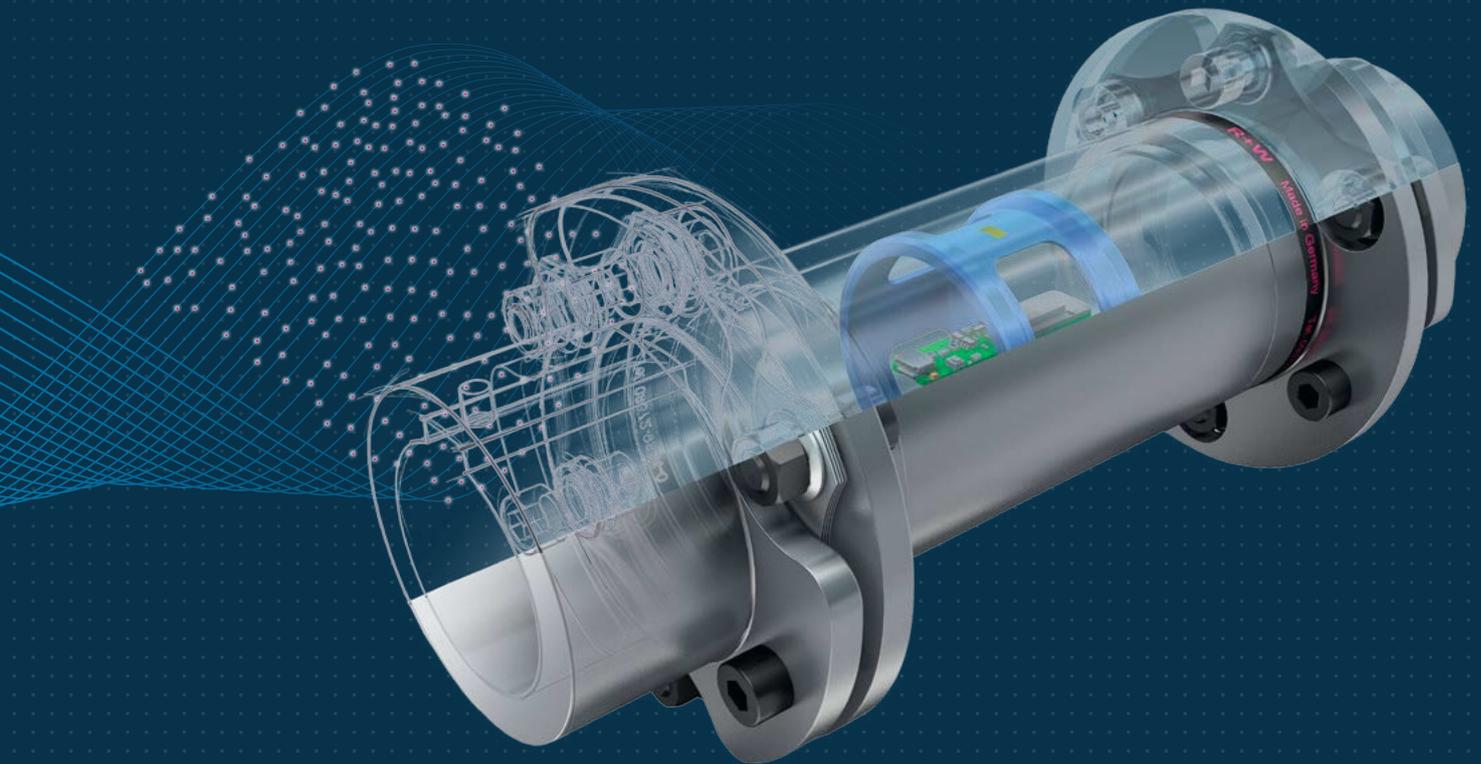


THE INTELLIGENT COUPLING.

R+W[®]
A POPPE + POTTHOFF COMPANY



INTEGRATED **SENSOR TECHNOLOGY**

PRECISION COUPLINGS | INDUSTRIAL COUPLINGS | SENSOR TECHNOLOGY

A new era in drive technology.

**Welcome to
the R+W world
of progress.**

Smart and secure into the future - the intelligent coupling from R+W is our innovative answer to modern requirements for digitalization, automation, and the Industrial Internet of Things (IIoT).

As the technical leader and specialist in metal bellows couplings, it was already a given that with the shift to Industry 4.0, and the increasing value of data and its bottom line impact, we don't just want to keep up, but rather to create change and to work proactively to make it a reality.

Until now real-time data collection in drive technology was especially challenging, with rotating powertrains difficult to access with wiring and instrumentation. But with the R+W intelligent coupling this is a problem of the past!



In addition to providing all of the advantages of an R+W coupling, the intelligent coupling system serves as a wireless data source. This is made possible through on-board sensor technology which measures torque, speed and acceleration in addition to special options for axial force and bending moment, all from directly within the rotating drive line.

Data is processed by an internal electronic system and transmitted via low energy Bluetooth signal to a connected mobile device, PC or to machine control. This valuable information about operating status and changing conditions can be key to condition monitoring and predictive maintenance.

**Foresight.
Application-
oriented.**

These state of the art tools of the IIoT benefit greatly from the opportunity to integrate data from couplings into intelligent algorithms.

Keeping you up to date „from a distance“ about wear, durability and other data critical to the performance of the application and neighbouring components, helping you anticipate and prevent expensive failures and down time.

Intelligent. Flexible. Upgradeable.

So smart, so simple: The intelligent coupling can be installed as an upgrade to existing coupling applications. The quick and easy assembly and setup minimize both hardware and installation costs. In many cases there is no additional assembly space or mechanical construction required, since the system can function without an external power supply, owing to an integral 3,400 mAh battery.

Read on to learn more about the range of intelligent sensor coupling solutions. Our R+W team is happy to help with questions and application inquiries.



R+W Sensor technology experience the future today.

Acquire measurement data with high precision in the drive line.

With intelligent couplings from R+W performance data can be taken directly from the drive line in near real time.

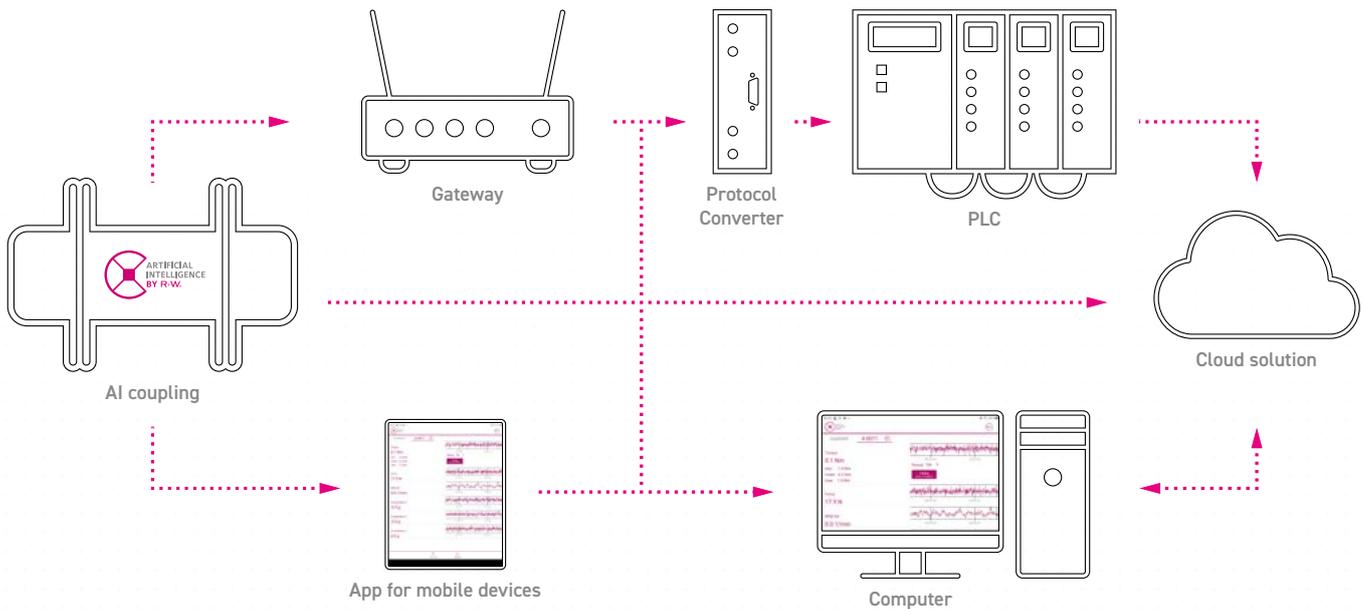
This kind of data collection was especially challenging in the past, with rotating drive lines difficult to access with wiring and instrumentation.

This is now history, thanks to the technology from R+W – available for integration into existing applications for simple and smart retrofitting.



R+W

Customer



Integrates into existing applications

There is often no additional assembly space or mechanical construction needed. Previously installed couplings get an intelligent retrofit.

Compatible with various couplings

Available in disc couplings, bellows couplings, elastomer couplings, torque limiters, and rigid flanges.

Extensive and precise measurement data

Better assessment of dynamic behavior in the rotating drive line.

Extremely smart and economical solution

Without high integration costs or time-consuming commissioning.

Combinable and time dependent measurements

Various scalable charts and graphs accurately track the course of events in your machinery process.

More transparency provides for more security

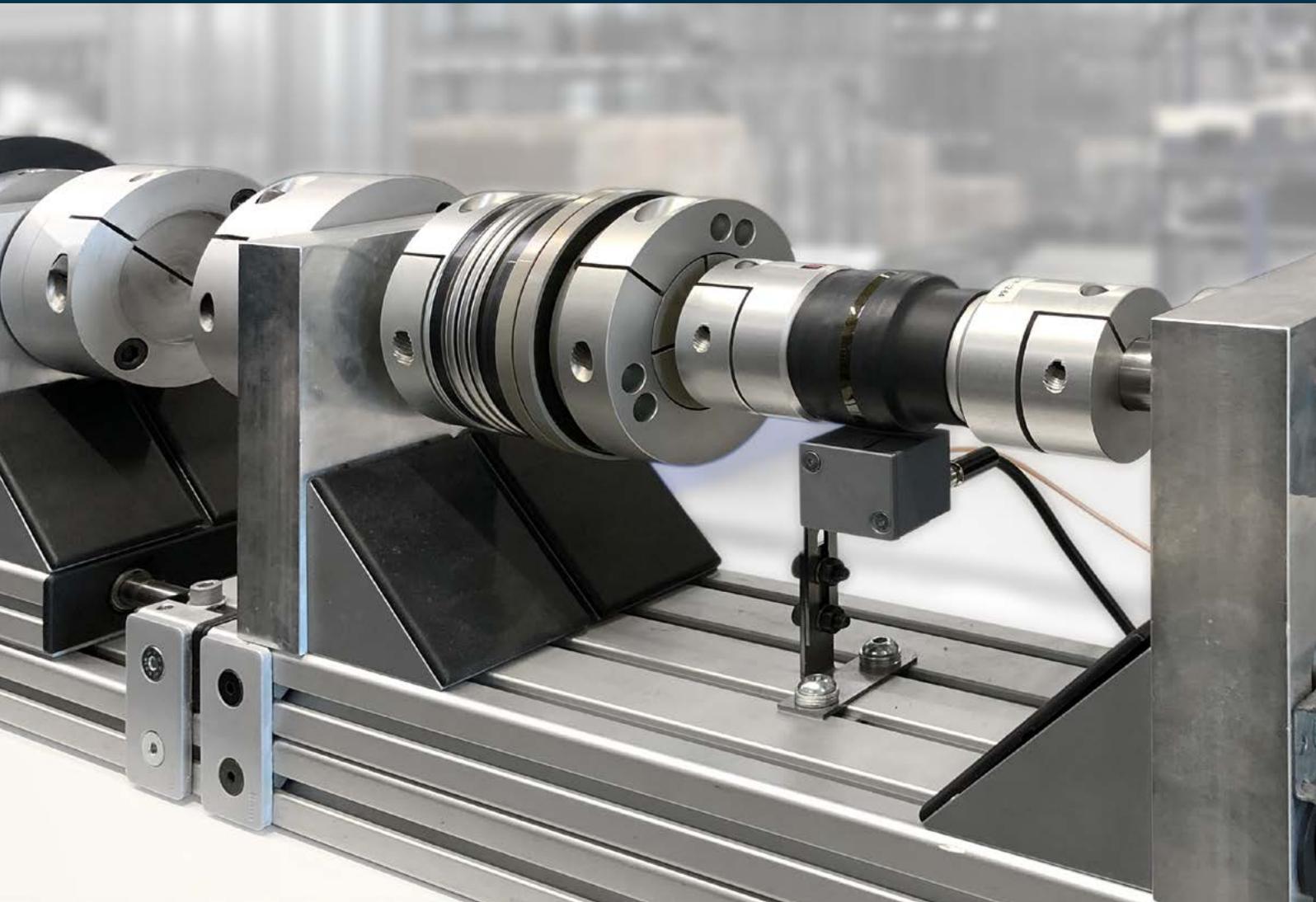
Keep an eye on important data at any time via smartphone app or wireless gateway.

Measurement data Intelligent. Flexible. Application-oriented.

Characteristics

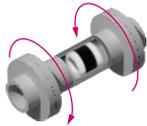
- + Torque measurement accuracy <1%
- + Integrated measuring amplifier
- + Processing directly through the integrated micro controller
- + Data can be viewed wirelessly on mobile devices
- + Optional data transfer to PC or machine control (via gateway)
- + CSV data export from app
- + Low energy Bluetooth output signal sampling rate 500 Hz
- + Transmission rate up to 500 Hz
- + Wireless charging option
- + No wiring needed for installation

up to **10 – 5.000 Nm**
(further on request)





+ Axial force



+ Torque



+ Shear force/bending



+ Acceleration



+ Speed



+ Temperature

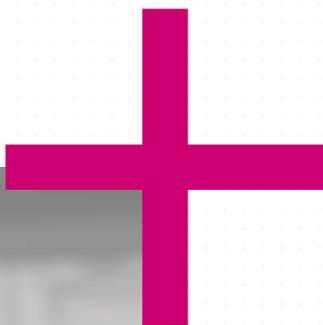
Exemplary fields of application

- + Pump packages
- + Extruders
- + Gear motors
- + Industrial transmissions
- + Test stands
- + Machine tools

Versions

Sensors can be configured individually to suit application requirements. Measurement options include:

- + Torque
- + Speed
- + Acceleration (3 axes)
- + Temperature
- + Axial force
- + Shear force/bending



Power supply

INTEGRATED BATTERY (standard version)

The sensor system is powered by an internal rechargeable battery with a runtime of up to 30 days.

INDUCTIVE POWER SUPPLY

In lieu of battery charging, the coupling can be configured with an inductive power supply mounted adjacent to the sensor. This enables continuous operation without interruption. The non-contact stationary device is connected to the main power supply. Energy transmission is by ISM-band while data transmission is still by Bluetooth.

ENERGY HARVESTING (coming soon)

On board generation, bringing the best of both power supply options.

R+W sensor technology for integration into existing applications.

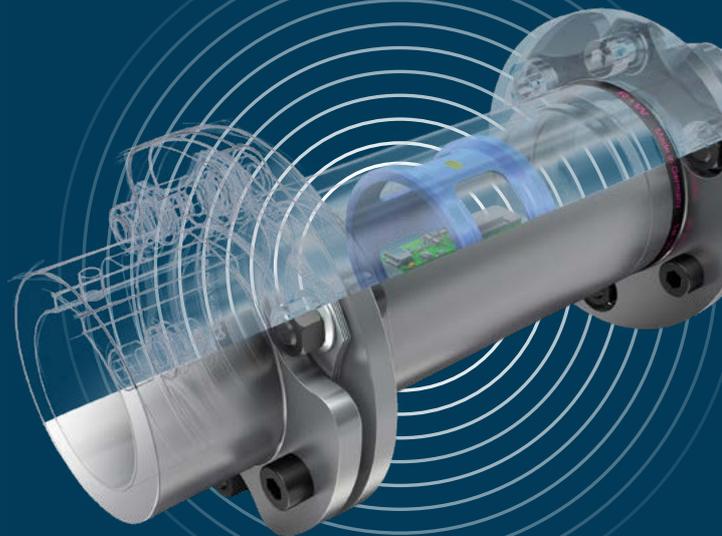
Characteristics

- + Simple and intuitive operation
- + Dashboard view with minimum/maximum and average values
- + Chart view with time dependent X-Y graphs
- + Up to four connected couplings at one time
- + Recording function for all values with CSV export
- + Information and settings information for both the intelligent coupling and the R+W gateway



R+W App

With the R+W App the measured data of the Intelligent Coupling can be displayed and recorded.



Intelligent Coupling

In the standard version torque and speed are measured.

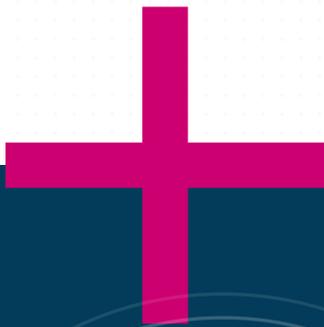
Requirements

- + Tablet or smartphone with Android
- + Android version 6.0 or newer
- + Minimum 30 MB of available memory
- + Bluetooth 4.0 or newer

Operating principle

Wireless sensing and transmission from directly within the drive line
– a concept as simple as brilliant:

1. Measure torque, speed and acceleration in addition to (optional) temperature, axial force and bending moment to get an accurate recording of operating status and overload events.
2. Data is processed directly inside the coupling while being broadcast to a paired smart device or to the machine control via the R+W gateway or to a PC.
3. The sensor technology is integrated into well proven R+W couplings. The mechanical properties of the coupling, such as axial, lateral, and angular misalignment compensation, as well as torque transmission characteristics, remain unaffected.



Gateway

The R+W industrial gateway supports the wireless transfer of sensor signals from the coupling into downstream systems for measurement, control and data processing.

Measurement data provision

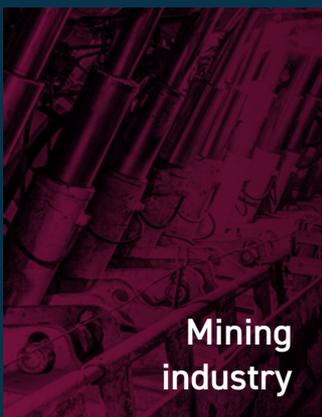
Data logger and event tracking (optional)

Recordings can be programmed via the app. Either at certain times, or when certain events occur, such as a set threshold value being exceeded. In addition, there is the function that the measured values are already recorded before the event by the software continuously recording and overwriting old data.

Technical Data

Connection	PC / SPS / cloud solution
USB-Port	USB-C (UART)
8 digital outputs	24 V
8 analog outputs	-10 to 10 V
Dimension (w x d x h)	24 x 120 x 100 mm
Weight	130 g
Mounting	Profile rail (EN 50022)
Power supply	24 V

Innovative coupling systems a solution for every industry.



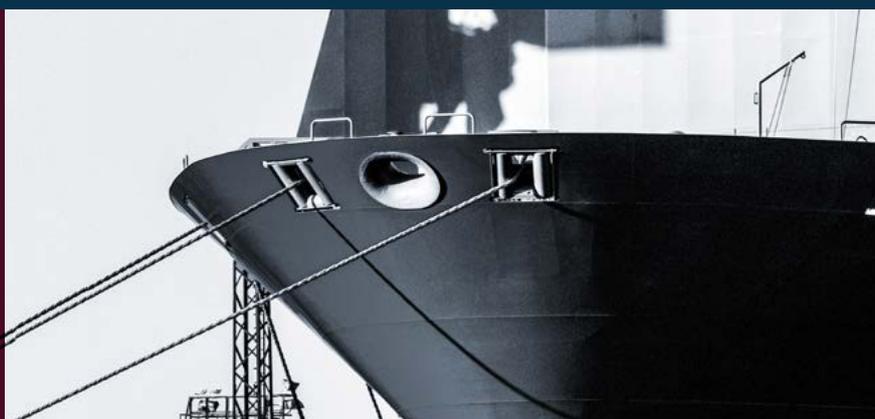
Mining
industry



Renewable
energies



Marine
technology



Sensors for integration into the following couplings.

Disc pack couplings

iLP2

from 350 – 5,000 Nm
standard length
from 220 – 295 mm



iLP3

from 350 – 5,000 Nm
standard length
from 201 – 270 mm



iLPA

from 350 – 5,000 Nm
(on request)



iLP5

from 350 – 50,000 Nm
standard length
from 216 – 323 mm

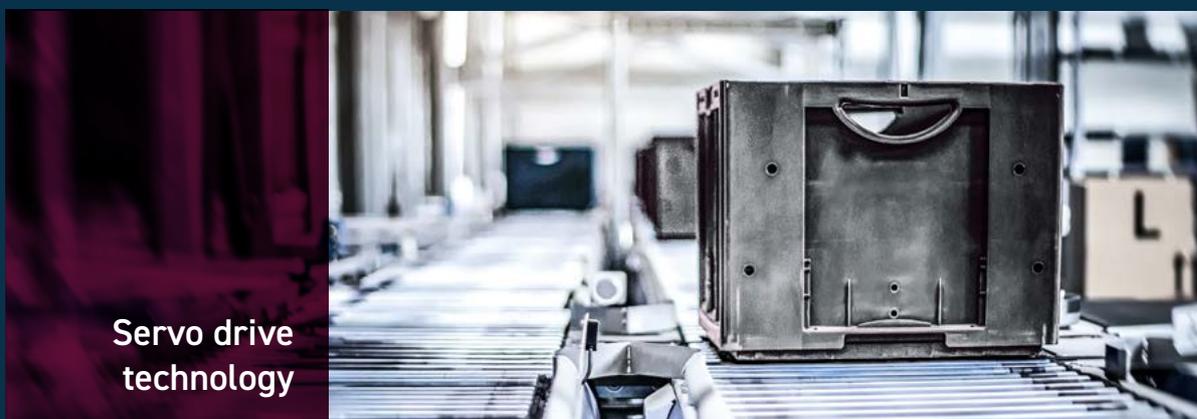


iLPH

from 350 – 50,000 Nm
standard length
from 216 – 329 mm



Innovative coupling systems a solution for every industry.



Sensors for integration into the following couplings.

Drive shafts

iZA

from 10 – 200 Nm
standard length
from 240 – 370 mm



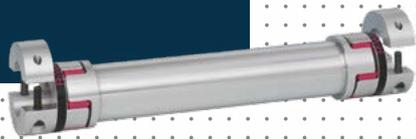
iZAE

from 10 – 150 Nm
standard length
from 225 – 305 mm



iEZ2

from 10 – 1,350 Nm
standard length
from 216 – 410 mm



Miscellaneous

iSTF

from 200 – 5,000 Nm



iFL

Upon request



Above all R+W is: **The perfect coupling.**

Who we are.

When R+W Antriebselemente GmbH was first established in 1990 in Klingenberg, Germany, there were three people on board. The head office is still there, but we are now more than 280 people, with subsidiaries in the USA, China, Italy, Singapore, France and Slovakia, and are partnered with over 80 well established distributors in more than 50 countries throughout the world. Many developments have lead to this success, but most importantly it was brought about by our endless search for the best possible coupling solutions as well as the high esteem in which we hold all of our customers.



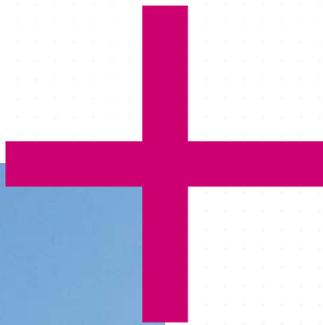
Product portfolio

- + Metal bellows couplings
- + Elastomer couplings
- + Safety couplings
- + Line shafts
- + Servo disc couplings
- + Gear couplings
- + Sensor technology

Planning security & new impulses.

R+W stands for expertise in the development of solutions for precise torque transmission. The focus of our development is on innovative coupling systems for all sectors of precision drive technology.

As a leading manufacturer of precision couplings and line shafts, we strive to maintain a permanent status of technology leadership in our field. Our central claim: R+W couplings ensure precision for process reliability and efficiency and to that end we seek perfection.



Special solutions

- + Consultation
- + Conception
- + Engineering analysis
- + Prototyping
- + Manufacturing

Socializing with R+W.

Would you like to learn more about R+W and our couplings? We are pleased to take you into the world of R+W. On our YouTube channel, you can find several videos pertaining to our product line.

Are you more interested in application examples for our couplings? If so, please take a look at our case studies that can be found on our homepage. Here you can also subscribe to the R+W newsletter or find a link to download the R+W App.

And if you simply cannot get enough of us, you can find us on Facebook, Twitter, YouTube and LinkedIn.



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