

High-Precision Positioning Switch  
**METROL<sup>®</sup> Metrol**

**NEW**

***New Radio  
Transmission System***

***Uninterrupted by  
NOISE!!***

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**High-Precision Compact  
TOUCH PROBE**



# Touch Probe

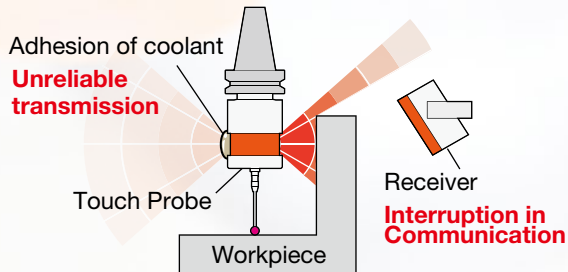




# Uninterrupted by NOISE, New Radio Transmission System

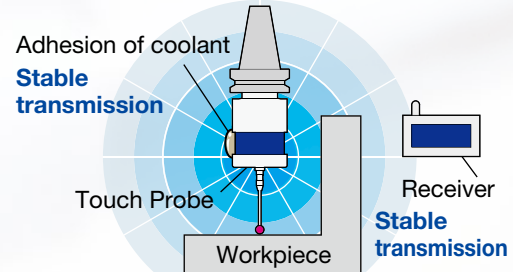
## ✗ Conventional infra-red optical communication

Affected by obstacles and coolant



## ✓ Metrol's new wireless transmission system

Uninterrupted by coolant or noise



- Selects the optimal channel automatically by searching the radio wave frequency band at all times.
- Designed for highly-reliable, noise resistant radio transmission.
- Compared to optical probes, radio probes are more suitable for large turnmill centres and 5-axis machines for precise measurement.

## 1 $\mu$ m Repeatability

Proven Metrol design: four-point support, mechanical structure.  
No correction of software "lobing".  
Achieves 1  $\mu$ m ( $2\sigma$ ) repeatability.

## Energy saving!! 180 hours without a battery change



Battery lasts for 180 hours under continuous use.

50% more energy saving compared to conventional infra-red optical communication system.

No deterioration of accuracy with decreasing battery life.

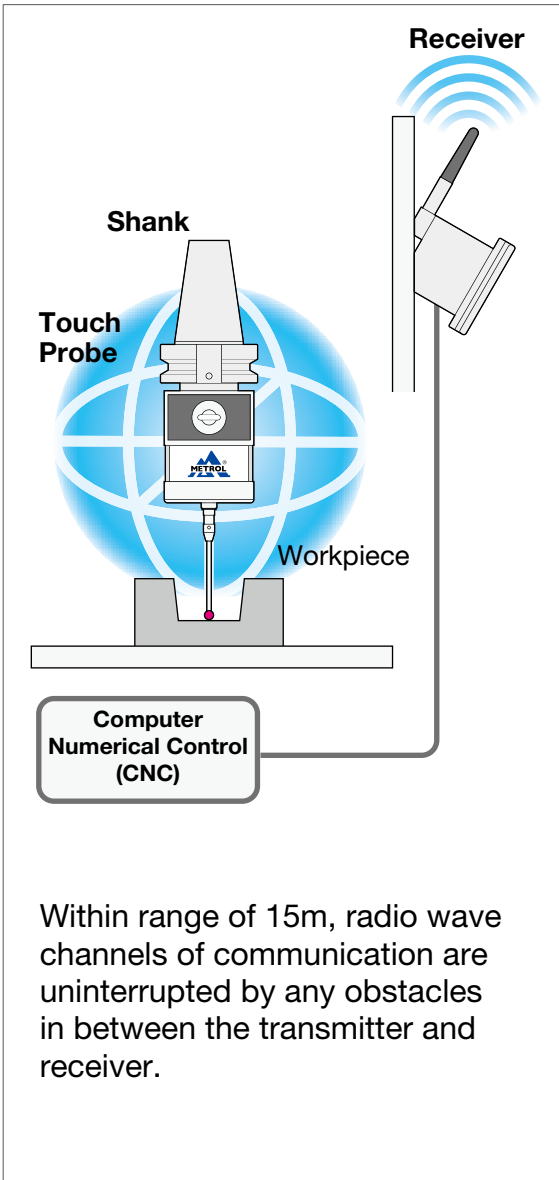
## Ultra compact - $\varnothing 40$



Ultra compact size -  $\varnothing 40$ mm.

Ideal for compact machining centers and high-speed machines with small shanks.

## System structure

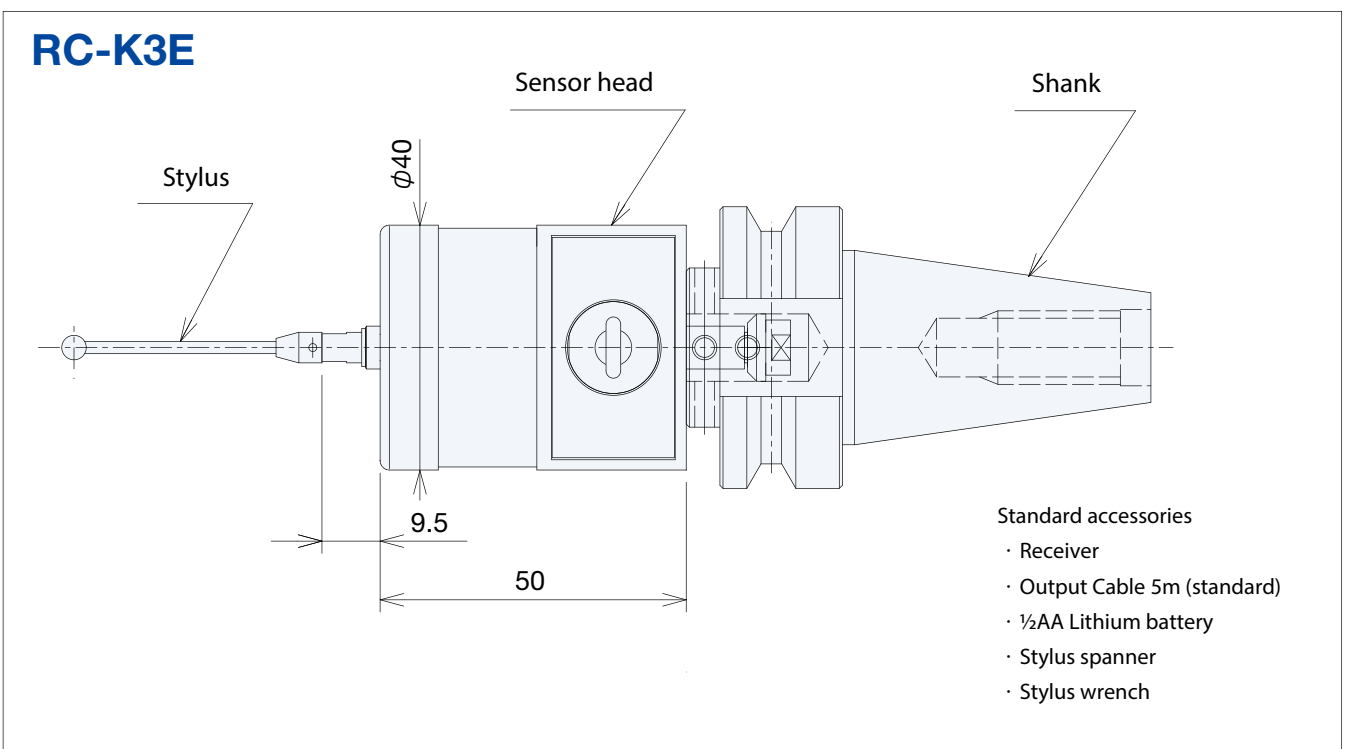


## Specifications

Primary application	Measuring workpieces and centering
Single direction repeatability	1.0 $\mu\text{m}$ ( $2\sigma$ ) *At the Speed of : 150 mm/min
Contact life time	3 million
Signal transmission format	FSK (DSSS) transmission format
No. of channels	37
Wireless frequency	2400MHz - 2480MHz
Power ON/OFF signal	M code
Signal transmission range	Max. 15m
Receiver / interface	Receiver antenna-integrated interface
Sensing directions	5 directions $\pm X, \pm Y, +Z$
Contact Force (when using 50 mm straight stylus)	XY : 0.5N Z : 5.5N
Overtravel (when using 50 mm straight stylus)	XY directions : $\pm 7^\circ$ +Z direction : 3 mm
Operating environment	For indoor use only
Waterproof design	IEC IP67
Storage temperature	-10°C to 70°C
Operating temperature	5°C to 50°C
Weight (excluding a shank)	With battery : 290g Without battery : 280g

Battery	1/2AA lithium-thionyl chloride battery (3.6V) 1Time
Time until battery replacement	After start of low battery indication : approx. 1 hr
Low battery indication	Flashing of battery alarm LED (orange)
Dead battery indication	Illumination of battery alarm LED (orange)
Battery life (reference value)	5% use (72 min/day) : 62 days Continuous use : 180 hours

## Outer dimension

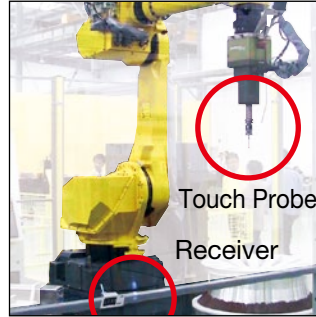


# Receiver



## Improved Visibility

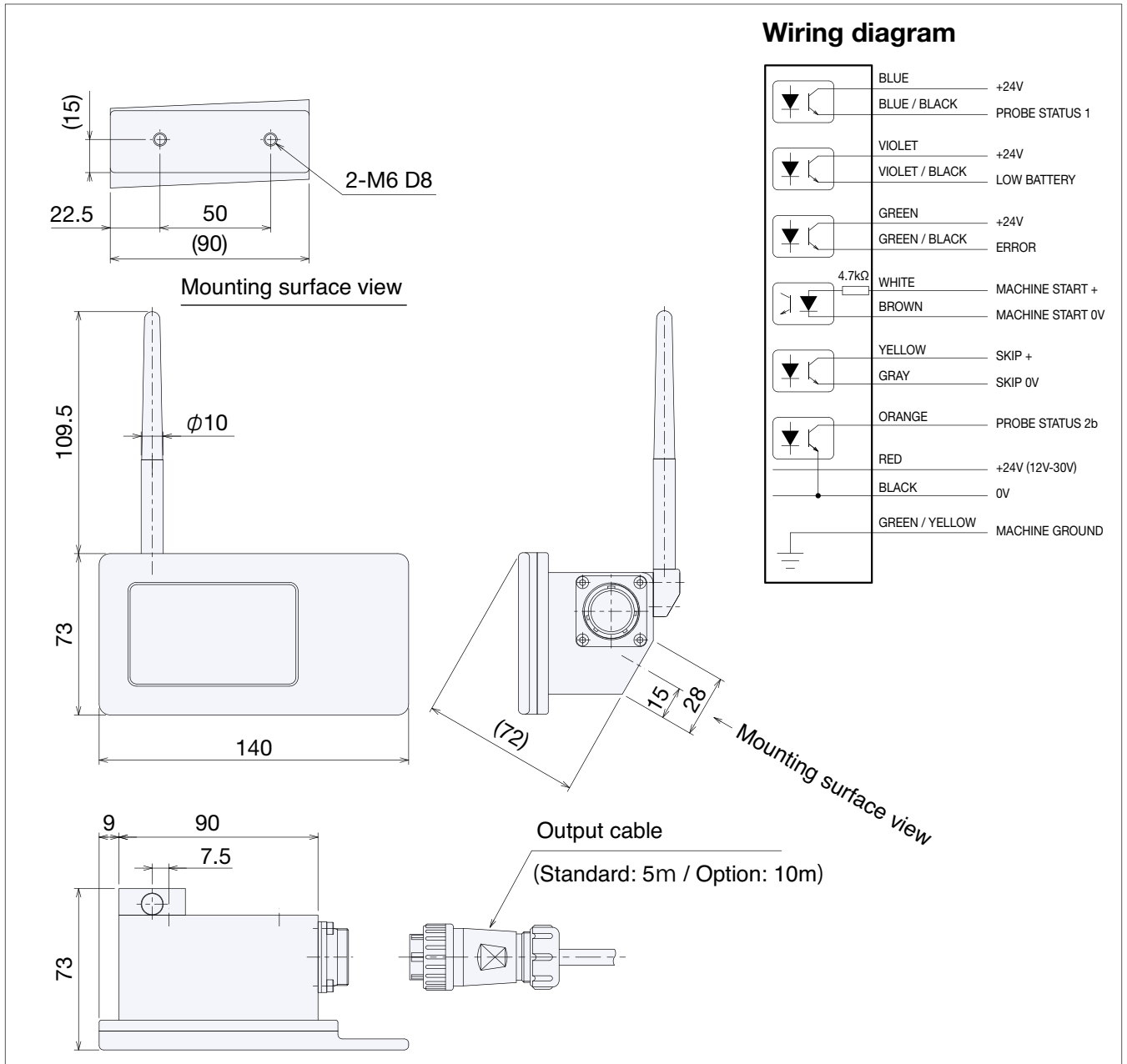
- Improved visibility due to external mounting.
- No hassles of cleaning the coolant and chips as compared to conventional internally mounted units.



Installation reference for Robot i series



Installation reference for Robo-drill



## Shank

Various options are available on request.



Size : **BT30**

Shank No. **H-BT30-001**

Size : **BT40**

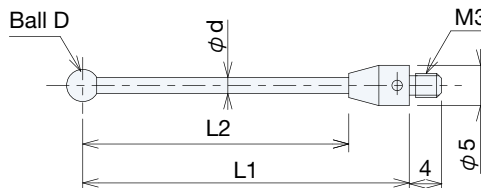
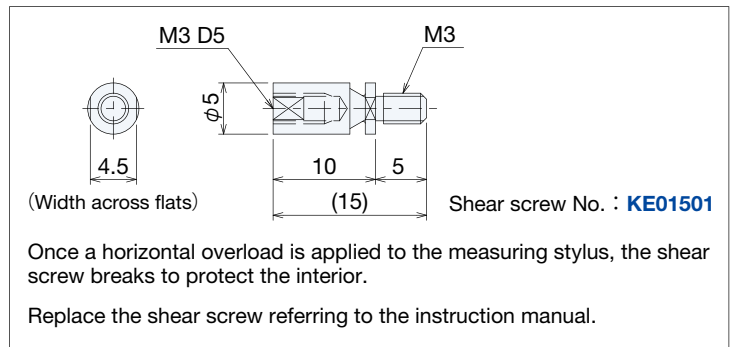
Shank No. **H-BT40-001**

## Stylus

Stylus No.	D	φd	L1	L2
<b>F-R50T-405</b>	5.0	2.5	40.5	33
<b>F-R40T-405</b>	4.0	2.0	40.5	33
<b>F-R30T-405</b>	3.0	1.5	40.5	33
<b>F-R20T-205</b>	2.0	0.8	20.5	13
<b>F-T10H-155</b>	1.0	0.7	15.5	8

Please contact us for other stylus shapes and materials.

## Shear screw



Stylus No.

**F - R** Ball diameter(D) **T -** Length(L1)

Shaft material

(**T**:Tungsten carbide, **H**:High speed steel)

Ball material (**R**:Ruby, **T**:Tungsten carbide)

## Precautions

- 1) Use the shortest stylus as possible. Long styli are more likely to cause chattering and malfunctions due to vibrations or impacts.
- 2) The stylus should be firmly fixed to the sensor head.
- 3) Clean the stylus frequently and remove adhesion of coolant or cutting chips on it in order to prevent variation in signal point.
- 4) Replace the stylus when it is worn or stuck with foreign substances which cannot be cleaned up.
- 5) Using big ball reduces the effect of surface finishing of the workpiece being inspected, avoiding erroneous measurement.
- 6) When the stylus has an extremely small stem diameter (φd), the shear screw may not be effective.
- 7) Using the stylus with extremely small stem diameter (φd) at high feed speed may result in breakage or variations in accuracy.

## Help desk

We accept inquiry regarding sensor selection, exclusive specification, and technical matter through website, Fax, and Tel.

www.metrol.co.jp/en

**TEL +81-50-5558-7366**

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**touchsensor@metrol.co.jp**

Metrol Co., Ltd.

Model : **RC-K3E**

Power : **3.6V**



[R] 001-A00026

CMIIT ID : 2012DJ3660

Made in Japan



FCC ID : AORMETROLRCK3E002

Metrol Co., Ltd.

Model : **RC-R02**

Power : **DC24V**



[R] 001-A00052

CMIIT ID : 2012DJ3661

Made in Malaysia



FCC ID : AORMETROLRCR02

This device complies with Part 15 of the FCC Rules.

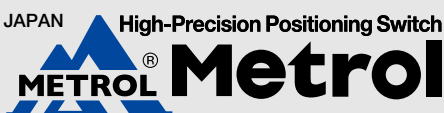
Operation is subject to the following two conditions:

- 1-this device may not cause harmful interference, and
- 2-this device must accept any interference received. Including interference that may cause undesired operation.

The specifications and descriptions are subject to change without notice due to improvements in products.

TOKYO JAPAN

High-Precision Positioning Switch



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RCK3E-E-K007