

# TORQUE TRANSDUCER TYPE TMNR-10NM~50NM

## SPECIFICATIONS

A

Rated capacity(R.C.) : 10 N·m, 20 N·m, 50 N·m  
 Safe overload : 120 %R.C.  
 Max. Safe overload : 200 %R.C.  
 Rated output(R.O.) : 0.75 mV/V±0.15 mV/V (10NM,20NM)  
 : 1.6 mV/V±0.32 mV/V (50NM)  
 (in case of combine CSA-561)  
 Accuracy : 0.5 %R.O.  
 (Include Non-linearity, Hysteresis and Repeatability)  
 Recommended excitation : 2 V AC  
 Insulation resistance : 500 MΩ or more  
 (Bridge-body)  
 Surrounding temperature range : 0 ℃ to 40 ℃  
 (because heat generation of Bearings.)

Rotation effect : 0.5 %R.O.  
 on zero balance  
 Generation of heat : 40 ℃ or under/Max.revolution  
 caused by rotation  
 IP class : IP40  
 Rotation finder gear : S45C,60tooth  
 (build in) 1module,tooth width 8mm  
 Rotor weight : approx. 1.3 kg  
 Total weight : approx. 3.0 kg  
 ATTACHMENT  
 Cable : φ10 4core shield 5m  
 Connector:TC1108-12A10-7M10.0  
 PRC03-12A10-7M10.5  
 Key : S45C,2pcs

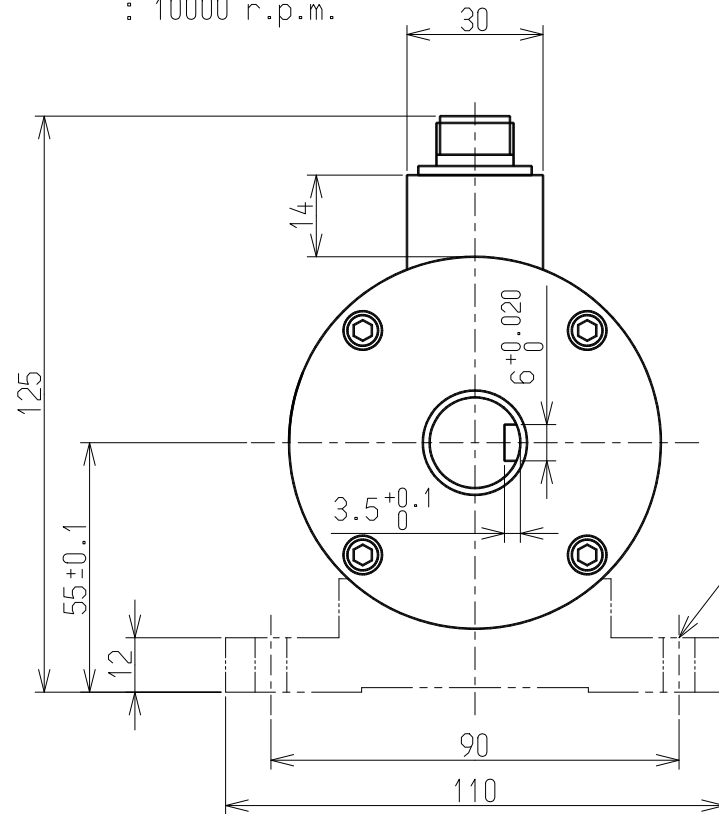
| Model(Capacity indicated)           | 10NM   | 20NM   | 50NM   |
|-------------------------------------|--------|--------|--------|
| Rotor inertia (kg·cm <sup>2</sup> ) | 2.864  | 2.864  | 2.864  |
| Rotor GD2 (kg·cm <sup>2</sup> )     | 11.45  | 11.45  | 11.45  |
| Torsional stiffness (kN·m/rad)      | 1.912  | 3.128  | 4.080  |
| Torsion peculiar pitch (kHz)        | 2.8    | 3.6    | 4.0    |
| Twist angle at R.C. (°)             | 0.294  | 0.359  | 0.689  |
| Safe radial load (N)                | 9.807  | 14.71  | 14.71  |
| Safe radial load(Static) (N)        | 9.807  | 29.42  | 49.03  |
| Safe thrust load (N)                | 98.07  | 98.07  | 98.07  |
| Bearing                             | 6005ZZ | 6005ZZ | 6005ZZ |

【NOTES】  
 Safe radial load:  
 Above data is at maximum speed.  
 Safe radial load(static):  
 Above data is direct loading by static test.

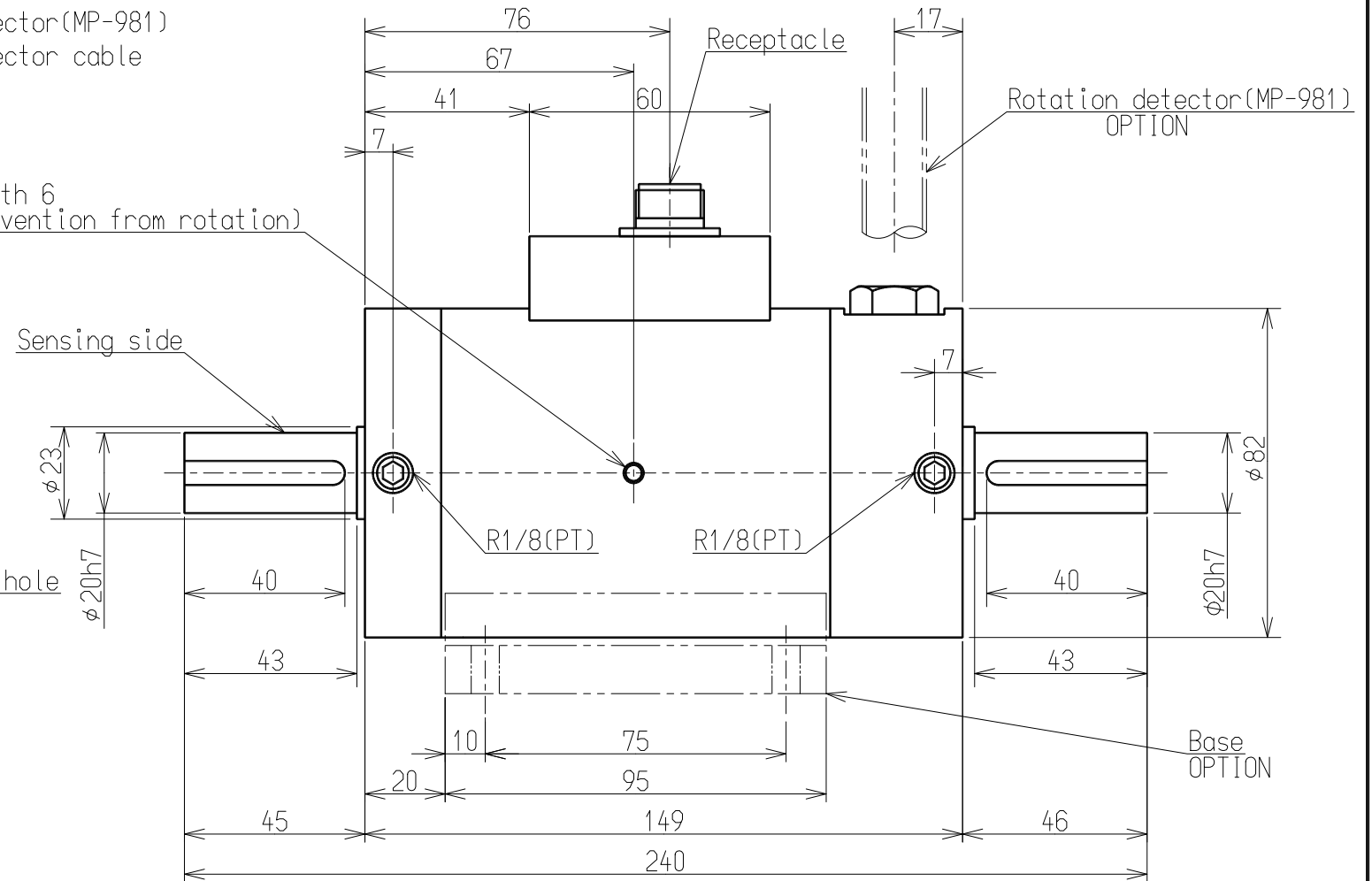
OPTION  
 Base(NRBS-1)  
 Rotation detector(MP-981)  
 Rotation detector cable

B

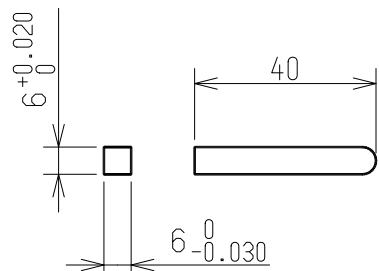
Safe temperature range : 0 ℃ to 90 ℃  
 Temperature effect on zero balance: 0.2 %R.O./10℃  
 Temperature effect on output : 0.2 %LOAD/10℃  
 Max. revolution : 10000 r.p.m.



2-M5 depth 6  
 (for prevention from rotation)



【KEY】



|    |
|----|
| 公布 |
| K  |
| S  |
| T  |
| F  |

|         |            |   |         |                                   |   |  |                                   |
|---------|------------|---|---------|-----------------------------------|---|--|-----------------------------------|
|         |            | <b>ミネベア株式会社</b><br>MINEBEA CO.,LTD.<br><b>計測機器事業部</b> |         | 単位 UNIT<br>mm<br>尺度 SCALE<br>Free | 材質 MATERIAL<br>-<br>表面粗さ SURF.ROUGH.<br>-<br>熱処理 HEAT TREAT.<br>-<br>表面処理 FINISH<br>- | 作成日 DATE 2015.02.10<br>品名 DESCRIPTION<br><b>OUTLINE</b><br>品番 PART NO.(MODEL NO.)<br>TMNR-10NM~50NM<br>図番 DRAWING NO.<br>KT53905-2 | 葉番 SHEET<br>1 / 1<br>改訂 REV.<br>- |
| 符号 MARK | 日付 DATE    | 変更事項 REASON   | ECN NO. | 公差 TOL                            | 一般公差  | 公差   |                                   |
| -       | 2015.02.10 | NEW   |         |                                   | 寸法 L  | 公差   |                                   |
|         |            |   |         |                                   | <L≤4  | ±0.1   |                                   |
|         |            |   |         |                                   | 4<L≤16  | ±0.2   |                                   |
|         |            |   |         |                                   | 16<L≤63   | ±0.3   |                                   |
|         |            |   |         |                                   | 63<L≤250  | ±0.5   |                                   |
|         |            |   |         |                                   | 250<L≤1000  | ±0.8   |                                   |
|         |            |   |         |                                   | 角度 DEG  | ±0.5   |                                   |