

Mounting, connection type and Insert length table - 12<sup>th</sup> thru 14<sup>th</sup> characters

| 12 <sup>th</sup> character |                 | 13 <sup>th</sup> character |                       | 14 <sup>th</sup> character |                      |
|----------------------------|-----------------|----------------------------|-----------------------|----------------------------|----------------------|
| Code                       | Connection size | Code                       | Connection type       | Code                       | Insertion length (m) |
| 0                          | 1"              | A                          | NPT                   | A                          | 2                    |
| 1                          | 1½"             | B                          | PT                    | B                          | 3                    |
| 2                          | 1½"             | C                          | B16.5 Class 150 RF    | C                          | 4                    |
| 3                          | 2"              | D                          | B16.5 Class 150 FF    | D                          | 5                    |
| 4                          | 2½"             | E                          | B16.5 Class 300 RF    | E                          | 6                    |
| 5                          | 3"              | F                          | B16.5 Class 300 FF    | F                          | 7                    |
| 6                          | 4"              | G                          | B16.5 Class 600 RF    | G                          | 8                    |
| 7                          | 6"              | H                          | B16.5 Class 600 FF    | H                          | 9                    |
| 9                          | Other           | I                          | B16.5 Class 600 RTJ   | J                          | 10                   |
|                            |                 | J                          | B16.5 Class 900 RF    | K                          | 15                   |
|                            |                 | K                          | B16.5 Class 900 FF    | L                          | 20                   |
|                            |                 | L                          | B16.5 Class 1,500 RF  | M                          | 25                   |
|                            |                 | M                          | B16.5 Class 1,500 FF  | N                          | 30                   |
|                            |                 | N                          | B16.5 Class 1,500 RTJ | P                          | 35                   |
|                            |                 | P                          | B16.5 Class 2,500 RF  | Q                          | 40                   |
|                            |                 | Q                          | B16.5 Class 2,500 FF  | R                          | 45                   |
|                            |                 | R                          | B16.5 Class 2,500 RTJ | S                          | 50                   |
|                            |                 | S                          | JIS 10K RF            | Z                          | Other                |
|                            |                 | T                          | JIS 10K FF            |                            |                      |
|                            |                 | U                          | JIS 20K RF            |                            |                      |
|                            |                 | V                          | JIS 20K FF            |                            |                      |
|                            |                 | Z                          | Other                 |                            |                      |

■14<sup>th</sup> characters note : Please choose the longest among measuring points.

## Main order

## Ordering information

## 1. Base model

- ✓ R511 Thermocouple single element  
 R512 Thermocouple double element  
 R521 RTD single element  
 R522 RTD double element

## 2. Head and stem type

- 0 General and protection tube  
 1 General and non - protection tube  
 2 Explosion proof and protection tube  
 3 Explosion proof and non - protection tube  
 ✓ 9 Other *Head Less - without head*

## 3. Head extension type and sealing location

- 0 Nipple and head  
 1 Nipple and flange  
 2 Union - Nipple and head  
 3 Union - Nipple and flange

*without head*  
*nipple-union-*  
*nipple*

## 4. Element (Tolerance)

- |   |                     |   |                     |
|---|---------------------|---|---------------------|
| K | K (0.75)            | ① | K (0.4)             |
| J | J (0.75)            | 2 | J (0.4)             |
| T | T (0.75)            | 3 | T (0.4)             |
| N | N (0.75)            | 4 | E (0.4)             |
| E | E (0.5)             | 5 | N (0.4)             |
| Q | Pt 100 $\Omega$ (B) | 9 | Pt 100 $\Omega$ (A) |
| Z | Other               |   |                     |

## 5. Number of measuring temperature point

- |   |   |   |       |
|---|---|---|-------|
| A | 2 | J | 10    |
| B | 3 | K | 11    |
| C | 4 | L | 12    |
| D | 5 | M | 13    |
| E | 6 | N | 14    |
| F | 7 | P | 15    |
| G | 8 | Z | Other |
| H | 9 |   |       |

## 6. Sheath outer diameter (mm)

- |   |     |   |                |
|---|-----|---|----------------|
| 0 | 1.6 | 5 | 1.6 / weld PAD |
| 1 | 3.2 | 6 | 3.2 / weld PAD |
| 2 | 4.8 | ⑦ | 4.8 / weld PAD |
| 3 | 6.4 | 8 | 6.4 / weld PAD |
| 4 | 8.0 | 9 | 8.0 / weld PAD |

## 7. Sheath material

- ① 316SS  
 2 Inconel  
 3 310SS  
 4 446SS  
 5 347SS  
 6 321SS  
 7 316L SS  
 9 Other

## 8. Protecting tube material

- 1 316SS  
 2 Inconel  
 3 310SS  
 4 446SS  
 5 347SS  
 6 321SS  
 ⑦ Other ✓ *with out*

## 9. Process connection

- XX Refer to connection table (12<sup>th</sup> and 13<sup>th</sup> character) 0 A

## 10. Insert length

- X Refer to insert length table (14<sup>th</sup> character) D

## 11. Option

- ① None ✓  
 1 Accessories

|      |   |   |   |   |   |   |   |    |    |    |
|------|---|---|---|---|---|---|---|----|----|----|
| 1    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9  | 10 | 11 |
| R511 | 0 | 3 | K | J | 3 | 1 | 1 | XX | X  | 0  |

Sample  
ordering code

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R500\_02

| SC ENGINEERING CO., LTD.                                                                                               |          |         |         |         |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------|----------|---------|---------|---------|--|--|--|--|--|
| HRSG-INSTRUMENTATION GENERAL SPECIFICATION                                                                             |          |         |         |         |  |  |  |  |  |
| THERMOCOUPLES & THERMOWELLS (SKIN TYPE)                                                                                |          |         |         |         |  |  |  |  |  |
| PROJECT : NO.3, POWER & STEAM GENERATION<br>CLIENT : ABADAN OIL REFINING CO.,(AORC)<br>PROJECT NO. : EK-0113<br>UNIT : |          |         |         |         |  |  |  |  |  |
| SHEET 1 OF 2<br>SPEC. NO.                                                                                              |          |         |         |         |  |  |  |  |  |
| REV                                                                                                                    | DATE     | BY      | CHKD    | APPD    |  |  |  |  |  |
| 1                                                                                                                      | 11.03.11 | K.C.LEE | G.S.LEE | T.R.KIM |  |  |  |  |  |
| 0                                                                                                                      | 09.08.25 | K.C.LEE | G.S.LEE | T.R.KIM |  |  |  |  |  |
| B                                                                                                                      | 09.03.25 | K.C.LEE | G.S.LEE | T.R.KIM |  |  |  |  |  |
| A                                                                                                                      | 08.05.23 | K.C.LEE | G.S.LEE | T.R.KIM |  |  |  |  |  |

  

|                                                                                                      |                                                                                                                       |                                                                                                                                                      |                                                                                                                   |                                                             |                                                                              |                                                                                                                                                                                                                                                                                                                                                                                 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| <p><b>1</b> Supply</p> <p>C : Complete Assembly<br/>W : Well Only w / Plug &amp; Chah<br/>(Code)</p> | <p><b>2</b> Cover</p> <p><input checked="" type="checkbox"/> Screwed Cap &amp; Chain<br/><input type="checkbox"/></p> | <p><b>3</b> Enclosure</p> <p><input type="checkbox"/> Weather Proof<br/><input checked="" type="checkbox"/> Explosion Proof<br/>Class Exd IIC T0</p> | <p><b>4</b> Material</p> <p><input checked="" type="checkbox"/> MFR, STD.<br/><input type="checkbox"/> SUS316</p> | <p><b>5</b> Elect. Conn.</p> <p>1+1/4" NPT(F) - 1 POINT</p> | <p><b>6</b> Size &amp; Mounting</p> <p>Approx. 300*300mm / Wall Mounting</p> | <p><b>ELEMENT</b></p> <p>Type <input checked="" type="checkbox"/> K <input type="checkbox"/> E <input type="checkbox"/> J <input type="checkbox"/> T <input type="checkbox"/> Other</p> <p>Characteristic<br/>ANSI MC 96.1<br/>0 - 1000(°C)</p> <p>Leads : Mfr, Std <input checked="" type="checkbox"/> Potted <input type="checkbox"/> Hear, Sealed <input checked="" type="checkbox"/></p> <p>Sheath O.D. 4.8mm<br/>Sheath Material 316SS<br/>Insulation<br/>Mgo INSULATED, Ungrounded<br/>Mouting Thread : <input checked="" type="checkbox"/> 1"NPT(M)<br/>Other W/Comp.Filing<br/>Connection <input checked="" type="checkbox"/> Single (2-Wire) <input type="checkbox"/> Double (4-Wire) <input type="checkbox"/> Bayonet Lock <input type="checkbox"/> Lead W/in <input type="checkbox"/> Replaceable <input type="checkbox"/></p> <p>MODEL : WISE &amp; RS11-5</p> | <p><b>HEAD-JUNCTION BOX</b></p> <p><input checked="" type="checkbox"/> None <input type="checkbox"/> Included <input type="checkbox"/> 304SS <input type="checkbox"/> By Other <input type="checkbox"/> 316SS</p> <p><b>12</b> Material</p> <p><b>13</b> Others</p> <p><b>14</b> Dimension</p> <p>OD = <input type="text"/><br/>ID = <input type="text"/><br/>Drilled <input type="checkbox"/> End-Close <input type="checkbox"/> Built-Up <input type="checkbox"/> Others</p> <p><b>15</b> Construction</p> <p><b>16</b> Power Supply : 24V DC<br/>Transmitter Output 4 - 20mA</p> <p><b>17</b> Transmitter Output 4 - 20mA</p> <p><b>18</b> MFR &amp; MODEL : Siemens / TK-H</p> | <p><b>THERMOWELL</b></p> <p><b>12</b> None <input checked="" type="checkbox"/> Included <input type="checkbox"/> 304SS <input type="checkbox"/> By Other <input type="checkbox"/> 316SS</p> <p><b>13</b> Others</p> <p><b>14</b> Dimension</p> <p>OD = <input type="text"/><br/>ID = <input type="text"/><br/>Drilled <input type="checkbox"/> End-Close <input type="checkbox"/> Built-Up <input type="checkbox"/> Others</p> <p><b>15</b> Construction</p> <p><b>16</b> Power Supply : 24V DC<br/>Transmitter Output 4 - 20mA</p> <p><b>17</b> Transmitter Output 4 - 20mA</p> <p><b>18</b> MFR &amp; MODEL : Siemens / TK-H</p> | <p><b>TRANSMITTER</b></p> <p><b>12</b> None <input checked="" type="checkbox"/> Included <input type="checkbox"/> 304SS <input type="checkbox"/> By Other <input type="checkbox"/> 316SS</p> <p><b>13</b> Others</p> <p><b>14</b> Dimension</p> <p>OD = <input type="text"/><br/>ID = <input type="text"/><br/>Drilled <input type="checkbox"/> End-Close <input type="checkbox"/> Built-Up <input type="checkbox"/> Others</p> <p><b>15</b> Construction</p> <p><b>16</b> Power Supply : 24V DC<br/>Transmitter Output 4 - 20mA</p> <p><b>17</b> Transmitter Output 4 - 20mA</p> <p><b>18</b> MFR &amp; MODEL : Siemens / TK-H</p> | <p><b>1</b> TE-1006</p> <p>204 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>2</b> TE-1007</p> <p>204 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>3</b> TE-1008</p> <p>204 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>4</b> TE-1009</p> <p>204 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>5</b> TE-1010</p> <p>204 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>6</b> TE-2006</p> <p>208 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>7</b> TE-2007</p> <p>208 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>8</b> TE-2008</p> <p>208 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>9</b> TE-2009</p> <p>208 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>10</b> TE-2010</p> <p>208 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>11</b> TE-3006</p> <p>212 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>12</b> TE-3007</p> <p>212 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>13</b> TE-3008</p> <p>212 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>14</b> TE-3009</p> <p>212 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>15</b> TE-3010</p> <p>212 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>16</b> TE-4006</p> <p>216 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>17</b> TE-4007</p> <p>216 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>18</b> TE-4008</p> <p>216 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> <p><b>19</b> TE-4009</p> <p>216 NO.2 SUPER HEATER TEMPERATURE</p> <p>GAS Single C 575 MULT-T/C SKIN PAD 5000 25.25*31.304SS</p> |
| <p>Note : 1. U-Dim : Immersion Length</p> <p>2. (1) Hydrogen Service CERTIFICATE</p>                 |                                                                                                                       |                                                                                                                                                      |                                                                                                                   |                                                             |                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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|     |          |         |         |         |
|-----|----------|---------|---------|---------|
| 1   | 11.10.31 | K.C.LEE | G.S.LEE | T.R.KIM |
| 0   | 09.08.25 | K.C.LEE | G.S.LEE | T.R.KIM |
| B   | 09.03.25 | K.C.LEE | G.S.LEE | T.R.KIM |
| A   | 08.05.23 | K.C.LEE | G.S.LEE | T.R.KIM |
| REV | DATE     | BY      | CHKD    | APPR    |

PROJECT NO. : EK-0113  
UNIT :

SHEET 2 OF 2  
SPEC. NO.

Note : 1. U-Dim : Immersion Length  
2. (1) Hydrogen Service CERTIFICATE