



Two universal inputs A, B  
 Difference, Average, Max, Min functions  
 0 / 1 / 2 / 3 / 4 setpoints for input A, input B or function selected  
 Isolated 2 x 0/4~20 mA or 0~10 V DC retransmission outputs corresponding to input A, input B or function selected  
 24 V DC transmitter supply  
 RS485 / MODBUS RTU  
 85~265 V AC or 20~35 V DC supply  
 6 alarm types

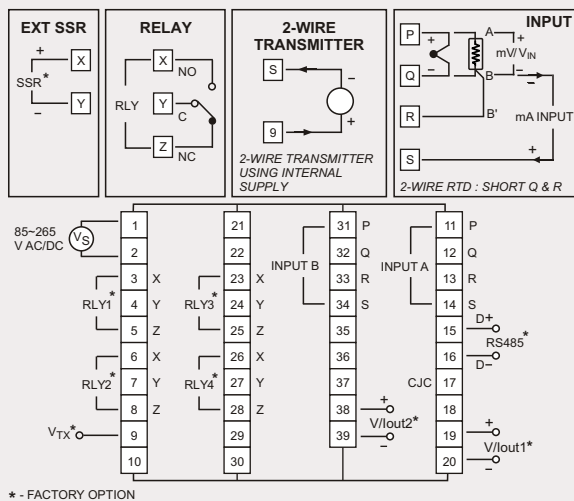
**SPECIFICATIONS** All specifications at ambient of 25 °C, unless specified otherwise

<p><b>INPUTS</b></p> <p><b>No. of inputs</b>                  Input group 1                  (common for both inputs)</p> <p>Thermocouple                  RTD                  Voltage                  Current</p> <p><b>Input group 2</b>                  (common for both inputs)</p> <p>Thermocouple                  RTD                  Current                  Voltage</p> <p><b>Transmitter supply</b>                  Range limits                  Accuracy                  Cold junction compensation                  Sensor break protection</p> <p><b>INDICATION</b></p> <p><b>Upper display</b></p> <p><b>Middle display</b></p> <p><b>Lower display</b></p> <p><b>LED indicators</b></p> <p><b>OUTPUTS</b></p> <p><b>No. of relays</b>                  Relay contact type                  Relay contact rating                  SSR drive                  No. of analog outputs                  Current output</p> <p><b>Maximum load for current output</b>                  Voltage output                  Load for voltage output</p>	<p>2 (input A, input B)</p> <p>B, E, J, K, N, R, S, T                  Pt100, 3-wire                  0~50 mV                  0~20 mA, 4~20 mA</p> <p>B, C, D, E, G, J, K, N, R, S, T                  Pt100, 3-wire, Cu53                  0~20 mA, 4~20 mA,                  Square root (for input 1)                  0~50 mV                  Through DIP selection following                  voltage inputs are available :                  0~1 V, 0~5 V, 0~10 V, 0~10 mV,                  0~100 mV, 0~200 mV                  22 V nominal, 30 mA max                  See Table 1                  See Table 1                  Automatic                  User programmable</p> <p>4 digit, 7 segment 0.56" (14.2 mm)                  red LED display                  Parameters : Difference (A - B)                  Maximum (A)                  Minimum (A)                  Average <math>\left(\frac{A+B}{2}\right)</math></p> <p>4 digit, 7 segment 0.39" (9.9 mm)                  green LED display                  Parameters : Setpoint 1                  Setpoint 2                  Input A</p> <p>4 digit, 7 segment 0.39" (9.9 mm)                  green LED display                  Parameters : Input A                  Input B</p> <p>Relay status                  Setpoints                  Communication                  Function</p> <p>0 / 1 / 2 / 3 / 4                  NO-C-NC                  5A / 230V AC, resistive                  12 V DC drive signal for external SSR                  0 / 1 / 2 (current or voltage)                  4~20 mA / 0~20 mA / 20~4 mA /                  20~0 mA isolated from input                  500 ohms                  0~10 V / user specified                  &gt;10 Kohms</p>	<p><b>COMMUNICATION</b></p> <p><b>Port</b>  <b>Protocol</b>  <b>Slave ID</b></p> <p><b>PROGRAMMABLE PARAMETERS</b></p> <p><b>Setpoint</b>  <b>Function</b></p> <p><b>Unit</b>  <b>Resolution</b></p> <p><b>High scale</b>  <b>Low scale</b>  <b>Digital filter</b>  <b>Hysteresis</b>  <b>Bias (for process variable)</b>  <b>Relay assignment</b></p> <p><b>Alarm type</b></p> <p><b>Alarm mode</b></p> <p><b>Alarm acknowledge</b></p> <p><b>Setpoint lock</b>  <b>Level lock</b>  <b>Relay action</b></p> <p><b>OTHER</b></p> <p><b>Programming</b>  <b>Dimensions (in mm)</b>  <b>Mounting</b>  <b>Panel cutout</b>  <b>Supply voltage</b></p> <p><b>Power consumption</b>  <b>Operating ambient temperature</b>  <b>Relative humidity</b></p> <p>RS485                  Modbus RTU                  User programmable (1~256)</p> <p>Full range (See Table 1)                  Difference (A-B)                  Maximum (A)                  Minimum (A)                  Average <math>\left(\frac{A+B}{2}\right)</math></p> <p>°C, °F, EU                  User selectable                  0.01, 0.1 or 1 for linear input,                  0.1 or 1 for temperature                  Full range (See Table 1)                  Full range (See Table 1)                  A (minimum) ~ F (maximum)                  0~25% span                  -50 to 50% of range limit                  Corresponding to input A or                  input B or function selected                  a. Fullscale high alarm                  b. Full scale low alarm                  c. Deviation high alarm                  d. Deviation low alarm                  e. Inband alarm                  f. Outband alarm                  (c. to f. available for SP2, SP3,                  SP4 only)</p> <p>Self reset or latched and can be                  disabled at power on                  Front panel function used to                  reset relay in alarm condition                  ON, OFF                  ON, OFF                  Reverse / direct</p> <p>Through 3 tactile keys                  96(H) x 96(W) x 100(D)                  Panel mount                  92 x 92 mm                  a) 85~265 V AC, 50/60 Hz                  b) 20~35 V DC (optional)                  4 watts maximum</p> <p>0~50 °C                  Below 90%, non condensing</p>
---	---	---

**TABLE 1**

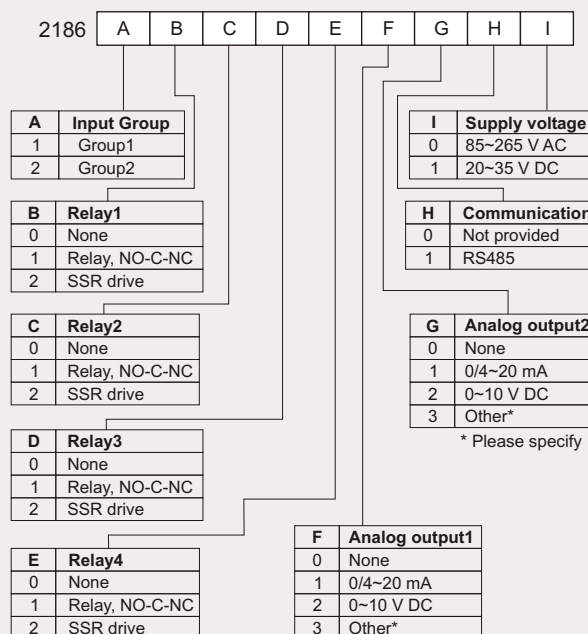
SENSOR / INPUT	RANGE LIMITS (°C / EU)		RANGE IN WHICH ACCURACY IS SPECIFIED		TYPICAL ACCURACY AT 30 °C (°C / EU)	WORST CASE ACCURACY (°C / EU)
	LOW SCALE	HIGH SCALE	LOW SCALE	HIGH SCALE		
<b>Input Group 1</b>						
Pt - 6% Rh / Pt - 30% Rh (B)	400	1820	400	1820	± 3	± 5
Chromel / Constantan (E)	-270	850	0	850	± 1	± 3
Iron / Constantan (J)	-210	760	0	760	± 1	± 3
Chromel / Alumel (K)	-270	1372	-50	1200	± 1	± 3
Nicrosil / Nisil (N)	-270	1300	-50	1200	± 1	± 3
Pt / Pt - 13% Rh (R)	0	1760	400	1760	± 2	± 5
Pt / Pt - 10% Rh (S)	0	1760	400	1760	± 2	± 5
Copper / Constantan (T)	-270	400	-200	400	± 1	± 3
Pt100, 3-wire	-200	850	-200	600	± 0.3	± 1.0
Linear (0~50 mV, 0~20 mA, 4~20 mA)	-1999	9999	-1999	9999	± 5 EU	± 20 EU
<b>Input Group 2</b>						
The following inputs are available in Input Group 2 in addition to inputs of Input Group 1.						
Tungsten - 5% Rh / Tungsten - 26% Rh (C)	0	2320	0	2320	± 3	± 5
Tungsten - 3% Rh / Tungsten - 25% Rh (D)	0	2310	0	2310	± 3	± 5
Tungsten / Tungsten - 26% Rh (G)	0	2310	0	2310	± 3	± 5
Cu53	0	180	0	180	± 0.3	± 0.5
Linear (0~10 mV, 0~100 mV, 0~200 mV, 0~1 V, 0~5 V, 0~10 V)	-1999	9999	-1999	9999	± 5 EU	± 20 EU
Linear (4~20 mA) with square root	0	9999	0	9999	± 10 EU	± 40 EU

### CONNECTION DIAGRAM



STK-689

### ORDERING INFORMATION



AN ISO 9001:2000 COMPANY

### SALES INQUIRIES

**1800-22-radix**  
**1800-22-7234**

[www.radix.co.in](http://www.radix.co.in)

**Radix Electrosystems Pvt Ltd**  
B-14, 2nd Floor, Ghanshyam Indl Estate  
Veera Desai Road, Andheri (W)  
Mumbai - 400 053, India  
Tel : + 91 22 26730101 Fax : + 91 22 26731891  
Email : sales@radix.co.in www.radix.co.in  
Exports email : exports@radix.co.in

**BANGALORE** C : 0-9341063830  
**BARODA** C : 0-9376215882  
**CHANDIGARH** C : 0-9313560869  
**CHENNAI** C : 0-9381056345  
**CHHATISGARH** C : 0-9337002344  
**COIMBATORE** C : 0-9380284497  
**GOA** C : 0-9371439090

**GWALIOR** C : 0-9322245543  
**HP** C : 0-9313560869  
**HYDERABAD** C : 0-9391053480  
**INDORE** C : 0-9301995060  
**KARNATAKA** C : 0-9341063831  
**KERALA** C : 0-9341273814  
**NAGPUR** C : 0-9322245543

**NEW DELHI** C : 0-9312600076  
T : 011-25786350  
**ORISSA** C : 0-9337002344  
**PUNE** C : 0-9371113404  
T : 020 24479759  
**PUNJAB** C : 0-9316460869  
0-9312600076