The IN 210/5 is a stationary pyrometer for non-contact temperature measurement of glass surfaces and quartz glass surfaces between 100 and 1200°C.

- Spectral range optimized for measurement of glass surfaces
- Small, robust stainless steel housing for easy installation, with electrical connector for facile mounting / demounting
- 2-wire technique for current supply and temperature measurement at the same time
- Internal digital signal processing for high accuracy
- High quality optics for detection of small measuring objects
- Temperature subrange programmable for adaptation of the analog output to the measuring task

This enables the instrument to be adapted to various measuring tasks. On request all necessary values can be set ex works.

The solid and robust design of the instrument guarantees high operational safety even in rough industrial environments.

Dimensions:
When measuring the temperature of very large and hot surfaces (for example by the float glass production), additional radiation is received by the pyrometer’s detector due to unavoidable effects (diffraction, multiple reflection). These effects increase the temperature output.

To get correct temperature values in this case, the pyrometer must be prepared ex works. The effect will be compensated by the so-called float glass calibration.

### Technical Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature range</td>
<td>100 ... 1200°C</td>
</tr>
<tr>
<td>Spectral range</td>
<td>5.14 µm</td>
</tr>
<tr>
<td>Accuracy</td>
<td>1% of reading in °C + 1°C (ε = 1, T_{amb} = 25°C, t_{90} = 1 s)</td>
</tr>
<tr>
<td>Repeatability</td>
<td>0.5% of reading in °C + 1°C (ε = 1, T_{amb} = 25°C, t_{90} = 1 s)</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.1°C</td>
</tr>
<tr>
<td>Parameters 1)</td>
<td>Sub range, emissivity, response time</td>
</tr>
<tr>
<td>Response time t_{90}</td>
<td>120 ms, adjustable up to 10 s via service interface</td>
</tr>
<tr>
<td>Emissivity ε</td>
<td>0.2 to 1.0 adjustable via service interface</td>
</tr>
<tr>
<td>Output</td>
<td>4 to 20 mA, linear, max. load 700 Ohm at 24 V</td>
</tr>
<tr>
<td>Power supply</td>
<td>24 V DC ± 25%; ripple ≤ 500 mV</td>
</tr>
<tr>
<td>Power consumption</td>
<td>Max. 0.6 W</td>
</tr>
<tr>
<td>Aperture</td>
<td>15 mm</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP65 (according to DIN 40 050)</td>
</tr>
<tr>
<td>Ambient temp.</td>
<td>0 to 70°C</td>
</tr>
<tr>
<td>Storage temp.</td>
<td>-20 to 70°C</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 450 g</td>
</tr>
<tr>
<td>CE-label</td>
<td>According to EU directives about electromagnetic immunity</td>
</tr>
</tbody>
</table>

### Optica Data

The pyrometers are equipped ex works with one of the following optics. These optics are fixed to a certain distance, i.e. at these distances each optic achieves its smallest spot size in relation to the measuring distance. The spot size will change in any other distance (shorter or longer). Please note that the measuring object must be at least as big as the spot size.

#### Table: Optics

<table>
<thead>
<tr>
<th>Optics</th>
<th>a : M</th>
<th>a [mm]</th>
<th>M [mm]</th>
<th>a₁ [mm]</th>
<th>M₁ [mm]</th>
<th>a₂ [mm]</th>
<th>M₂ [mm]</th>
<th>D [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>40 : 1</td>
<td>100</td>
<td>2.5</td>
<td>200</td>
<td>18</td>
<td>300</td>
<td>35</td>
<td>15</td>
</tr>
<tr>
<td>300</td>
<td>50 : 1</td>
<td>300</td>
<td>6</td>
<td>600</td>
<td>22</td>
<td>1000</td>
<td>45</td>
<td>80</td>
</tr>
<tr>
<td>1200</td>
<td>50 : 1</td>
<td>1200</td>
<td>24</td>
<td>2500</td>
<td>50</td>
<td>4000</td>
<td>80</td>
<td></td>
</tr>
</tbody>
</table>

1) Programming via service interface with portable battery driven setup device HT 6000 or via USB adapter and software infraWin (optional) or preset ex works (on request)

### Reference Numbers

#### Instruments:

- 3 819 440 IN 210/5: 100 ... 1200°C, optics a = 100 mm
- 3 819 450 IN 210/5: 100 ... 1200°C, optics a = 300 mm
- 3 819 460 IN 210/5: 100 ... 1200°C, optics a = 1200 mm
- 3 891 040 Float glass calibration (to order separately)

#### Accessories:

- Connection cable: 2 m ... 30 m
- Mounting angle, adjustable
- Battery driven laser targeting light

#### Scope of delivery:

- Instrument, works certificate, user manual.
- A connection cable is not included in scope of delivery and has to be ordered separately.

#### Ordering note:

- A connection cable is not included in scope of delivery and has to be ordered separately.

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