The Series 200 I/O System features a number of interface units for various process applications. The I/O units are compatible with the I/O 200C units and can be mixed with them in any order on the same DIN rail.

The units in the I/O system are intended for use in industrial environment and they fulfil the EMC directive 89/336/EEC. The I/O units may be mounted centrally at the Central System or remotely.

The inputs and outputs are filtered and galvanically isolated by optocouplers. Configuration of the I/O units’ functions and measuring ranges is performed using the system software.

The units of Series 200 are used by SattCon 200 and SattLine to varying extents, and in various combinations.

The Series 200 I/O System features:

- Replacement under system power
- CE and UL approval
- Software configurable function
- Mechanical coding for safe replacement
- Safety function on outputs in remote configuration
- Variety of termination options
- The same I/O units in central and remote configurations
- Compatible with I/O 200C
**I/O Units**
The in/outputs are filtered and galvanically isolated by optocouplers. LEDs are located on the front.

It is possible under system power to remove/insert the units. The process is connected to the units via the terminal base. Power for the internal logic is provided on the serial bus via the adapter for the I/O system. The use of I/O units and their functionality with SattCon 200 and SattLine systems is dependent on certain system versions and configurations. Please refer to the relevant manuals or data sheets.

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**200-IB10xOB6**
I/O unit for ten digital input and six digital output signals. The status of each signal is indicated by a yellow LED. The outputs can deliver up to 2 A to the I/O system.

Each signal is isolated from the logic circuits by an optocoupler and filtered with a low-pass filter. The inputs have a programmable filter time.

**200-IE8**
I/O unit for eight analogue input signals. The unit has 12-bit resolution and each of the inputs can be either a voltage (0–10 V DC, ±10 V DC) or a current (0–20 mA, 4–20 mA) input. Selection of voltage or current is made both by the programming software and by the input on the terminal base unit.

One green LED indicates power on/off. The inputs are, as a group, galvanically isolated from the system by optocouplers. An additional power supply is required.

**200-IE4xOE2**
I/O unit for four analogue input and two analogue output signals. Selection of voltage or current is made both by the programming software and directly on the terminal base unit. One green LED indicates power on/off.

The inputs and the outputs are, as a group, galvanically isolated from the system by optocouplers. An additional power supply is required.

---

**200-IB16**
I/O unit for 16 digital input signals. The status of each input signal is indicated by a yellow LED.

Each signal is isolated from the logic circuits by an optocoupler and filtered with a low-pass filter. The inputs have a programmable filter time.

**200-OB16, 200-OB16P**
I/O units for 16 digital output signals. The outputs of 200-OB16P are short-circuit proof. Up to four outputs can be connected in parallel (the total load must, however, not exceed 1.8 A).

The status of each output signal is indicated by a yellow LED if +24 V DC is supplied.

The 16 outputs share a common ground connection.

**200-IB16** contains a counter.

**200-OE4**
I/O unit for four analogue output signals. The unit has 12-bit resolution and each of the outputs can be either a voltage (0–10 V DC, ±10 V DC) or a current (0–20 mA, 4–20 mA) output. Selection of voltage or current is made both by the programming software and by the output on the terminal base unit.

One green LED indicates power on/off. The outputs are, as a group, galvanically isolated from the system by optocouplers. An additional power supply is required.

**200-IP2**
I/O unit with two pulse transmitter interfaces, each with four optocoupled inputs. The maximum pulse frequency is 100 kHz. The I/O unit is configured using the control system program. 200-IP2 can be adapted for a wide range of applications, for example, for counting pulses from pulse transmitters or incremental encoders with one or two pulse trains. Quantity counting, positioning and speed calculation are examples of other applications.

200-IP2 has two 16-bit up/down counters, which are individually programmable. The number of edges to be counted in a pulse train can be specified to x1, x2 or x4. Complementary or non-complementary pulse transmitters can be connected.

The status of each input signal is indicated by a yellow LED. One bi-coloured LED indicates function status.
I/O unit with four pulse transmitter interfaces, each with two optocoupled inputs. The maximum pulse frequency is 100 kHz. The I/O unit is configured using the control system program. 200-IP4 can be adapted for a wide range of applications, for example, for counting pulses from flow and density meters, quantity counting and speed calculation.

200-IP4 has two 16-bit counters per channel. Each can be individually configured for either period time measurement, using one 16-bit counter and accumulating pulse counting using the other 16-bit counter or period time measurement using a 32-bit counter.

An internal clock (1 or 10 MHz) is used for the period time measurement. The status of each input signal is indicated by a yellow LED. One bi-coloured LED indicates function status.

200-IT8

I/O unit for eight thermocouple input signals with programmable filters and 16-bit resolution. One bi-coloured LED indicates power on/off. Terminal base unit TB3T must always be used. An additional power supply is required.

200-IR8

I/O unit for eight four-wire RTD input signals. The inputs have programmable filters and 16-bit resolution. One sensor type is supported. The status of each input signal is indicated by a yellow LED. A green LED indicates function status. The inputs are, as a group of eight, galvanically isolated from the system by optocouplers. Each channel can be turned off to improve system throughput. An additional power supply is required.

200-IA8

I/O unit for eight digital 120 V AC input signals. The status of each input signal is indicated by a yellow LED. Each signal is filtered with a low-pass filter.

The input signals are sampled at intervals determined by the filter time. The signal status is changed only if two consecutive samples are the same. The filter time is set with the programming software. The eight inputs share a common voltage connection.

200-OA8

I/O unit for eight digital 120 V AC output signals. The status of each output signal is indicated by a yellow LED. Output indicators will not work unless 120 V AC is supplied. The eight outputs share a common 0 V AC connection.

200-OW8

I/O unit for eight relay output signals. The status of each output signal is indicated by a yellow LED. If the voltage exceeds 132 V, terminal base unit 200-TBN or 200-TBNF must be used. An additional power supply is required.

200-OB8EP

I/O unit for eight short-circuit proof output signals. The unit is intended for detection of short-circuit condition in its output circuit or low impedance loads causing excessive current drain. Each of the eight output channels has a current sensing circuit. The unit is designed to allow up to 2.0 A current per channel. The status of each output signal is indicated by a yellow LED. Diagnostics are carried out for each output and a fault is indicated by a red LED. By pressing a manual reset button, all output faults are reset simultaneously. Diagnostics and reset functions are fully accessible from the application. The eight outputs share a common ground connection.
### General specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power supply</strong></td>
<td>24 V DC (19.2–30 V DC) incl. 5% ripple acc. to EN 61131-2 standard i.e. +20%, -15% and max. 5% ripple</td>
</tr>
</tbody>
</table>
| **Temperature (unless stated otherwise)** | Operating: ±0 °C to +55 °C  
Non-operating: -40 °C to +85 °C |
| **Protection rating**      | IP20                                                                    |
| **Environment**            | Industrial areas                                                |
| **Approvals (when product or packaging is marked)** | CE marked and meets EMC directive 89/336/EEC according to EN 50081-2 and EN 50082-2.  
Low Voltage Directive 73/23/EEC with suppl. 93/68/EEC acc. to EN 61131-2 (only appl. for units connected to 50–1000 V AC and/or 75–1500 V DC).  
UL listed according to UL 508.  
CSA certified; class 1 div. 2 hazardous locations. |
| **Package volume**         | 1 unit: H133 x W133 x D93 mm (1.65 dm³)  
10 units: H278 x W470 x D150 mm (19.60 dm³) |
| **Dimensions**             | H 46 x W 94 x D 53 mm                                                  |
| **Weight (unless stated otherwise)** | 0.085 kg excl. package  
0.100 kg incl. package |

### 200-IB16

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of inputs</strong></td>
<td>16 positive logic</td>
</tr>
<tr>
<td><strong>Galvanic isolation</strong></td>
<td>Yes (via optocouplers)</td>
</tr>
<tr>
<td><strong>Status indicators</strong></td>
<td>16 yellow LEDs for input indications</td>
</tr>
<tr>
<td><strong>ON-state input voltage</strong></td>
<td>10.0 V DC min., 24 V DC nominal, 31.2 V DC max.</td>
</tr>
<tr>
<td><strong>ON-state input current</strong></td>
<td>2.0 mA min., 8.0 mA nominal, 11.0 mA max.</td>
</tr>
<tr>
<td><strong>OFF-state input voltage</strong></td>
<td>5.0 V DC max.</td>
</tr>
<tr>
<td><strong>OFF-state input current</strong></td>
<td>Current must be ≤1.5 mA to be defined as being in OFF state</td>
</tr>
<tr>
<td><strong>Filter time</strong></td>
<td>Software programmable</td>
</tr>
<tr>
<td><strong>Filter</strong></td>
<td>First-order, low-pass filter with time constant 5 µs</td>
</tr>
<tr>
<td><strong>Input impedance</strong></td>
<td>4.6 kΩ max.</td>
</tr>
<tr>
<td><strong>Isolation voltage</strong></td>
<td>100% tested at 850 V DC for 1 s between user and system. No isolation between individual channels</td>
</tr>
<tr>
<td><strong>Internal current consumption (from serial bus)</strong></td>
<td>30 mA max.</td>
</tr>
<tr>
<td><strong>Power dissipation</strong></td>
<td>6.1 W at 31.2 V DC max.</td>
</tr>
<tr>
<td><strong>Unit identity</strong></td>
<td>281H</td>
</tr>
<tr>
<td><strong>Counter</strong></td>
<td>5 bits on channel 15. 500 Hz max. Min. pulse width 1 ms</td>
</tr>
<tr>
<td><strong>Backplane key code</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>Max. 5–95%, non-condensing</td>
</tr>
<tr>
<td><strong>Order code</strong></td>
<td>200-IB16</td>
</tr>
</tbody>
</table>

### 200-OB16, 200-OB16P

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of outputs</strong></td>
<td>16 positive logic</td>
</tr>
<tr>
<td><strong>Galvanic isolation</strong></td>
<td>Yes (via optocouplers)</td>
</tr>
<tr>
<td><strong>Status indicators</strong></td>
<td>16 yellow LEDs for output indications</td>
</tr>
<tr>
<td><strong>ON-state voltage range</strong></td>
<td>10 V DC min., 24 V DC nominal, 31.2 V DC max.</td>
</tr>
<tr>
<td><strong>ON-state voltage drop</strong></td>
<td>0.5 V DC max.</td>
</tr>
<tr>
<td><strong>Output current rating</strong></td>
<td>8 A (16 outputs at 0.5 A)</td>
</tr>
</tbody>
</table>

### 200-IB10xOB6

**General specifications:**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Galvanic isolation</strong></td>
<td>Yes (via optocouplers)</td>
</tr>
<tr>
<td><strong>Status indicators</strong></td>
<td>16 yellow LEDs for in/output indications</td>
</tr>
<tr>
<td><strong>Isolation voltage</strong></td>
<td>100% tested at 2100 V DC for 1 s between plant and system</td>
</tr>
<tr>
<td><strong>Internal current consumption (from the serial bus)</strong></td>
<td>35 mA max.</td>
</tr>
<tr>
<td><strong>Power dissipation</strong></td>
<td>4.0 W at 31.2 V DC max.</td>
</tr>
<tr>
<td><strong>Unit identity</strong></td>
<td>100H</td>
</tr>
<tr>
<td><strong>Backplane key code</strong></td>
<td>2</td>
</tr>
</tbody>
</table>
| **External DC Power**      | Supply voltage: 24 V DC nom. (19.2–31.2 V DC)  
Supply current: 49 mA at 24 V DC (38 mA–65 mA) |
| **Humidity**               | Max. 5–95%, non-condensing                                             |
| **Order code**             | 200-IB10xOB6                                                           |

### Input specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of inputs</strong></td>
<td>10 positive logic, non-isolated</td>
</tr>
<tr>
<td><strong>ON-state input voltage</strong></td>
<td>10 V DC min., 24 V DC nominal, 31.2 V DC max.</td>
</tr>
<tr>
<td><strong>ON-state input current</strong></td>
<td>2.0 mA min., 8.0 mA nominal, 11.0 mA max.</td>
</tr>
<tr>
<td><strong>OFF-state input voltage</strong></td>
<td>5 V DC max.</td>
</tr>
<tr>
<td><strong>OFF-state input current</strong></td>
<td>Current ≤1.5 mA to be defined as being in OFF state</td>
</tr>
<tr>
<td><strong>Input impedance</strong></td>
<td>4.4 kΩ max.</td>
</tr>
<tr>
<td><strong>Filter time</strong></td>
<td>Software programmable</td>
</tr>
<tr>
<td><strong>Filter</strong></td>
<td>First-order, low-pass filter with time constant 100 µs (i.e. time to reach 63% of FS)</td>
</tr>
</tbody>
</table>
### Output specifications:

- **Number of outputs**: 6 positive logic
- **ON-state voltage range**: 10 V DC min., 24 V DC nominal, 31.2 V DC max.
- **ON-state current**: 1.0 mA per output min., 2.0 A per output max., 10 A per unit max.
- **OFF-state voltage**: 31.2 V DC max.
- **Output current rating**: 2 A per output, 10 A per unit
- **Surge current**: 4 A for 50 ms each, repeatable ev. 2 s
- **OFF-stage leakage**: 0.5 mA max.
- **ON-stage voltage drop**: 2 V DC at 2 A, 1 V DC at 1 A

#### 200-IP2, 200-IP4

- **Number of inputs**
  - 200-IP2: 2 pulse counter interfaces, each with 4 inputs
  - 200-IP4: 4 pulse counter interfaces, each with 2 inputs
- **Counting frequency**
  - Min. 100 kHz. Each signal condition must be stable for at least 2 μs to be recognized by the counter logic
  - Min. 153 Hz for intermittent clock = 10 MHz
- **Galvanic isolation**
  - Yes (via optocouplers)
- **Status indicators**
  - 200-IP2: 2 x 6 yellow LEDs for I/O status, 1 red/green LED for OK status
  - 200-IP4: 4 x 2 yellow LEDs for I/O status, 4 x 2 yellow LEDs for selected measurement function, 1 red/green LED for OK status
- **Input range (2 x 4 input signals)**
  - Terminal “+” and “−” for each input
    - **Input ON (active)**
      - Max. +26.4 V DC, (24 V DC +10 %), min. +6 V DC
    - **Input OFF (inactive)**
      - Max. +3.0 V DC, min. −26.4 V DC
- **Input current**
  - Typ. 3 mA at 6 V DC
  - Typ. 8 mA at 12 V DC
  - Typ. 15 mA at 24 V DC
- **Voltage range — external power supply**
  - 12–24 V DC ±10 %
- **Current consumption — external power supply**
  - 150 mA at 12 V DC
  - 75 mA at 24 V DC
- **Isolation voltage**
  - 500 V DC
- **Internal current consumption (from serial bus)**
  - 5 mA
- **Power dissipation**
  - Max. 5 W (at 24 V input voltage at all inputs)
- **Unit identity**
  - 200-IP2: 1800 (hex)
  - 200-IP4: 1A00 (hex)
- **Backplane key code**
  - 1

#### 200-OE4

- **Number of outputs**: 4
- **Galvanic isolation**: Yes (via optocouplers)
- **Status indicators**: One green LED for Power
- **Resolution**: 12-bit plus sign
- **Output voltage range**: 2–10 V DC, ±10 V DC, 0–10 V DC
- **Output current range**: 4–20 mA, 0–20 mA
- **Time to reach 63% of FS**: 24 ms (first-order, low-pass filter time constant)
- **Current load on voltage output**: 3 mA max.
- **Resistive load on mA output**: 15–750 Ω
- **Non-linearity**
  - Voltage: 0.1%
  - Current: 0.1%
- **Accuracy**
  - Voltage terminal: ± 0.13% FS at 25°C
  - Current terminal: ± 0.43% FS at 25°C
- **Accuracy drift with temperature**
  - Voltage terminal: ± 0.005% FS/°C
  - Current terminal: ± 0.007% FS/°C
- **Isolation Voltage**: Type-test voltage: 850 V DC for 1 s between user and system. No isolation between individual channels
- **Internal current consumption (from serial bus)**
  - 20 mA max.
- **Power dissipation**: 4.5 W at 31.2 V DC max.
- **Unit identity**: 1125H
- **Backplane key code**: 4

#### 200-IE8

- **Number of inputs**: 8 single-ended
- **Galvanic isolation**: Yes (via optocouplers)
- **Status indicators**: One green LED for Power
- **Resolution**: 12-bit
### General specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of inputs</strong></td>
<td>4 single-ended</td>
</tr>
<tr>
<td><strong>Number of outputs</strong></td>
<td>2 single-ended</td>
</tr>
<tr>
<td><strong>Galvanic isolation</strong></td>
<td>Yes (via optocouplers)</td>
</tr>
<tr>
<td><strong>Status indicators</strong></td>
<td>One green LED for Power</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td>12-bit</td>
</tr>
<tr>
<td><strong>Isolation Voltage</strong></td>
<td>Type-test voltage: 850 V DC for 1 s between user and system. No isolation between individual channels</td>
</tr>
<tr>
<td><strong>Internal current consumption (from serial bus)</strong></td>
<td>20 mA max.</td>
</tr>
<tr>
<td><strong>Power dissipation</strong></td>
<td>4.0 W at 32.1 V DC max.</td>
</tr>
<tr>
<td><strong>Unit identity</strong></td>
<td>1526H</td>
</tr>
<tr>
<td><strong>Backplane key code</strong></td>
<td>5</td>
</tr>
</tbody>
</table>

### External DC Power Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supply voltage</strong></td>
<td>24 V DC nom. (19.2–31.2 V DC)</td>
</tr>
<tr>
<td><strong>Supply current</strong></td>
<td>70 mA at 24 V DC (not incl. outputs)</td>
</tr>
<tr>
<td><strong>Humidity Operating</strong></td>
<td>Max. 5–95%</td>
</tr>
<tr>
<td><strong>Humidity Non-operating</strong></td>
<td>Max. 5–80%</td>
</tr>
<tr>
<td><strong>Order code</strong></td>
<td>200-IE4xOE2</td>
</tr>
</tbody>
</table>

### Input specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of inputs</strong></td>
<td>4 single-ended</td>
</tr>
<tr>
<td><strong>Input voltage range</strong></td>
<td>2–10 V DC, ±10 V DC, 0–10 V DC</td>
</tr>
<tr>
<td><strong>Input current range</strong></td>
<td>4–20 mA, 0–20 mA</td>
</tr>
<tr>
<td><strong>Input resistance</strong></td>
<td>200 kΩ</td>
</tr>
<tr>
<td><strong>Filter</strong></td>
<td>First-order, low-pass filter with time constant 100 ms (i.e. time to reach 63% of FS)</td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>± 0.3% FS at 25°C</td>
</tr>
<tr>
<td><strong>Accuracy drift with temperature</strong></td>
<td>± 0.0045% FS/°C</td>
</tr>
<tr>
<td><strong>Overload without damage</strong></td>
<td>30 V DC continuously</td>
</tr>
<tr>
<td><strong>Current</strong></td>
<td>32 mA continuously, one channel at a time max.</td>
</tr>
</tbody>
</table>

### Output specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of outputs</strong></td>
<td>2 single-ended, non-isolated</td>
</tr>
<tr>
<td><strong>Output current range</strong></td>
<td>4–20 mA, 0–20 mA</td>
</tr>
<tr>
<td><strong>Output voltage range</strong></td>
<td>2–10 V DC, ±10 V DC, 0–10 V DC</td>
</tr>
<tr>
<td><strong>Time to reach 63% of FS</strong></td>
<td>24 ms (first-order, low-pass filter time constant)</td>
</tr>
<tr>
<td><strong>Current load on voltage output</strong></td>
<td>3 mA max.</td>
</tr>
<tr>
<td><strong>Resistive load on mA output</strong></td>
<td>15–750 Ω</td>
</tr>
<tr>
<td><strong>Non-linearity</strong></td>
<td>0.1%</td>
</tr>
</tbody>
</table>

### External DC Power Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supply voltage</strong></td>
<td>24 V DC nom. (19.2–31.2 V DC)</td>
</tr>
<tr>
<td><strong>Supply current</strong></td>
<td>60 mA at 24 V DC</td>
</tr>
<tr>
<td><strong>Humidity Operating</strong></td>
<td>5–95%, non-condensing</td>
</tr>
<tr>
<td><strong>Humidity Non-operating</strong></td>
<td>5–80%, non-condensing</td>
</tr>
<tr>
<td><strong>Order code</strong></td>
<td>200-IT8</td>
</tr>
</tbody>
</table>
**200-IR8R**

**Number of inputs:** 8  
**Galvanic isolation:** Yes (via optocouplers)  
**Status indicators:** 8 yellow LEDs (field side indication)  
**Resolution:** 16-bits  
**Input range:** 0–100% (0–65535) corresponding to 0–10 V DC  
**Overvoltage capability:** ±35 V DC, ±65 V AC continuous at 25 °C, ±100 V AC peak transient  
**Filter:** Programmable 
**Accuracy:** ±0.1 °C in the range -5 to +10 °C  
**Long term stability:**  
  - 1 year: ±0.006 °C  
  - 3 years: ±0.013 °C  
**Internal current consumption (from serial bus):** 20 mA max.  
**Normal mode noise rejection:** 60 dB at 50 Hz  
**Calibration:** Factory calibrated  
**Common mode rejection:** 120 dB at 60 Hz; 100 dB at 50 Hz for A/D filter cut-off at 10 Hz  
**System throughput:** 150 ms per channel at 50 Hz  
**Open or short-circuit RTD detection:** Out of range reading and individual fault indication  
**Open-wire detection or short-circuit detection time:** < 1 s  
**RTD excitation current:** About 1.8 mA, alternating direction  
**RTD algorithm:** ITS 90  
**Supported sensors (resistance):** 100 Ω Pt Euro -60 to +160 °C (κ = 0.00385) IEC 751  
**Unit identity:** 200H  
**Power dissipation:** 3 W at 30.0 V DC max.  
**Backplane key code:** 2  
**External DC power:** Supply voltage 24 V DC nominal (19.2–30.0 V DC)  
**Supply current:** 100 mA at 24 V DC  
**Temperature:** Operating: +5 °C to +55 °C  
  - Non-operating: -25 °C to +70 °C  
**Humidity:** Non-condensing  
**Operating:** Max. 5–95%  
**Non-operating:** Max. 5–80%  
**Order code:** 200-IR8R

---

**200-OA8**

**Number of outputs:** 8 (1 group of 8), non-isolated  
**Galvanic isolation:** Yes (via optocouplers)  
**Status indicators:** 8 yellow LEDs (field side indication)  
**ON-state voltage:** 65 V AC min.  
**OFF-state voltage:** 43 V AC max.  
**ON-state current:** 7.1 mA min.  
**OFF-state current:** 2.9 mA max.  
**Filter time:** Software programmable  
**Filter:** First-order, low-pass filter with time constant 8 ms  
**Isolation voltage:** 100% tested at 2150 V AC for 1 s between user and system. No isolation between individual channels  
**Input impedance:** 10.6 kΩ nominal  
**Internal current consumption (from serial bus):** 30 mA max.  
**Power dissipation:** 4.5 W at 132 V AC max.  
**Unit identity:** 285H  
**Backplane key code:** 8  
**External AC Power:** Supply voltage 120 V AC nominal  
**Input frequency:** 47–63 Hz  
**Voltage range:** 85–132 V AC  
**Humidity:** Max. 5–95%, non-condensing  
**Order code:** 200-OA8

---

**200-IA8**

**Number of inputs:** 8 (1 group of 8), non-isolated  
**Galvanic isolation:** Yes (via optocouplers)  
**Status indicators:** 8 yellow LEDs for I/O status  
**Resolution:** 16-bits  
**Input range:** 0–100% (0–65535) corresponding to 0–10 V DC  
**Overvoltage capability:** ±35 V DC, 25 V AC continuous at 25 °C, 250 V AC peak transient  
**Filter:** Programmable  
**Accuracy:** ±0.1 °C in the range -5 to +100 °C  
**Long term stability:**  
  - 1 year: ±0.006 °C  
  - 3 years: ±0.013 °C  
**Internal current consumption (from serial bus):** 20 mA max.  
**Normal mode noise rejection:** 60 dB at 50 Hz for A/D filter cut-off at 10 Hz  
**Calibration:** Factory calibrated  
**Common mode rejection:** 120 dB at 60 Hz; 100 dB at 50 Hz for A/D filter cut-off at 10 Hz  
**System throughput:** 150 ms per channel at 50 Hz  
**Open or short-circuit RTD detection:** Out of range reading and individual fault indication  
**Open-wire detection or short-circuit detection time:** < 1 s  
**RTD excitation current:** About 1.8 mA, alternating direction  
**RTD algorithm:** ITS 90  
**Supported sensors (resistance):** 100 Ω Pt Euro -60 to +160 °C (κ = 0.00385) IEC 751  
**Unit identity:** 1900H  
**Power dissipation:** 3 W at 30.0 V DC max.  
**Backplane key code:** 2  
**External DC power:** Supply voltage 24 V DC nominal (19.2–30.0 V DC)  
**Supply current:** 100 mA at 24 V DC  
**Temperature:** Operating: +5 °C to +55 °C  
  - Non-operating: -25 °C to +70 °C  
**Humidity:** Non-condensing  
**Operating:** Max. 5–95%  
**Non-operating:** Max. 5–80%  
**Order code:** 200-IR8R

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**200-IA8**

**Number of inputs:** 8 (1 group of 8), non-isolated  
**Galvanic isolation:** Yes (via optocouplers)  
**Status indicators:** 8 yellow LEDs (field side indication)  
**ON-state voltage:** 65 V AC min.  
**OFF-state voltage:** 43 V AC max.  
**ON-state current:** 7.1 mA min.  
**OFF-state current:** 2.9 mA max.  
**Filter time:** Software programmable  
**Filter:** First-order, low-pass filter with time constant 8 ms  
**Isolation voltage:** 100% tested at 2150 V AC for 1 s between user and system. No isolation between individual channels  
**Input impedance:** 10.6 kΩ nominal  
**Internal current consumption (from serial bus):** 30 mA max.  
**Power dissipation:** 4.5 W at 132 V AC max.  
**Unit identity:** 285H  
**Backplane key code:** 8  
**External AC Power:** Supply voltage 120 V AC nominal  
**Input frequency:** 47–63 Hz  
**Voltage range:** 85–132 V AC  
**Humidity:** Max. 5–95%, non-condensing  
**Order code:** 200-OA8

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**200-IA8**

**Number of inputs:** 8 (1 group of 8), non-isolated  
**Galvanic isolation:** Yes (via optocouplers)  
**Status indicators:** 8 yellow LEDs (field side indication)  
**ON-state voltage:** 65 V AC min.  
**OFF-state voltage:** 43 V AC max.  
**ON-state current:** 7.1 mA min.  
**OFF-state current:** 2.9 mA max.  
**Filter time:** Software programmable  
**Filter:** First-order, low-pass filter with time constant 8 ms  
**Isolation voltage:** 100% tested at 2150 V AC for 1 s between user and system. No isolation between individual channels  
**Input impedance:** 10.6 kΩ nominal  
**Internal current consumption (from serial bus):** 30 mA max.  
**Power dissipation:** 4.5 W at 132 V AC max.  
**Unit identity:** 285H  
**Backplane key code:** 8  
**External AC Power:** Supply voltage 120 V AC nominal  
**Input frequency:** 47–63 Hz  
**Voltage range:** 85–132 V AC  
**Humidity:** Max. 5–95%, non-condensing  
**Order code:** 200-OA8
### 200-OW8

**Number of outputs**
8 (1 group of 8), normally open

**Galvanic isolation**
Yes (via optocouplers and relays)

**Status indicators**
8 yellow LEDs

**Output voltage range (load dependent)**
- 5–30 V DC at 2.0 A resistive
- 48 V DC at 0.5 A resistive
- 125 V DC at 0.25 A resistive
- 125 V AC at 2.0 A resistive
- 240 V AC at 2.0 A resistive

**Output current rating (at rated power)**
- Resistive: 2.0 A at 5–30 V DC
  - 0.5 A at 48 V DC
  - 0.25 A at 125 V DC
  - 2 A at 240 V AC
- Inductive (steady state):
  - 2.0 A at 5–30 V DC, L/R = 7 ms
  - 0.5 A at 48 V DC, L/R = 7 ms
  - 0.25 A at 125 V DC, L/R = 7 ms
  - 2.0 A, 15 A at operation of a relay at 25 V AC, cos φ = 0.4
  - 2.0 A, 15 A at operation of a relay at 240 V AC, cos φ = 0.4

**Power rating (steady state)**
- Resistive: 250 W max. for 125 V AC
  - 480 W max. for 240 V AC
  - 60 W max. for 30 V DC
  - 24 W max. for 48 V DC
  - 31 W max. for 125 V DC
- Inductive:
  - 250 VA max. for 125 V AC
  - 480 VA max. for 240 V AC
  - 60 VA max. for 30 V DC
  - 24 VA max. for 48 V DC
  - 31 VA max. for 125 V DC

**Initial contact resistance**
30 mΩ

**Switching frequency**
1 operation/3 s (0.3 Hz at rated load) max.

**Operate/release time**
10 ms, max.

**Bounce time**
1.2 ms, mean

**Contact load**
100 μA at 100 mV DC min.

**Expected life of electrical contacts**
100,000 operations min. at rated loads

**OFF-state leakage current**
1 mA max. at 240 V AC through snubber circuit

**Isolation voltage**
- between any 2 sets of contacts: 2550 V DC for 1 s
- customer load to logic: 2550 V DC for 1 s
- customer load to 24 V DC supply: 2550 V DC for 1 s
- customer 24 V DC supply to logic: 850 V DC for 1 s

**Output signal delay**
- OFF to ON: 8 ms max. (time from a valid output on signal-to-relay energization by the module)
- ON to OFF: 26 ms max. (time from a valid output on signal-to-relay de-energization by the module)

**Internal current consumption (from serial bus)**
- 69 mA max.
- 5.5 W max.

**Power dissipation**
- 192 to 31.2 V DC (incl. 5% ripple)
- 125 mA max.

**Humidity**
- Max. 3 A (when used in TBNF)
- Max. 5–95%, non-condensing

**Order code**
200-OA8

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### 200-OB8EP

**Number of outputs**
8 (1 group of 8)

**Galvanic isolation**
Yes (via optocouplers)

**Status indicators**
8 yellow LEDs for status indications and 8 red LEDs for diagnostic fault indication

**ON-state voltage range**
- 0.2 V DC max.

**ON-state voltage drop**
10 A (e.g. 8 outputs at 1.25 A, 5 outputs at 2.0 A or similar output/A combinations, tot. ≤ 10 A)

**ON-state current**
- 1.0 A min. per channel
- 2.0 A max. per channel

**OFF-state voltage**
31.2 V DC max.

**Surge current**
- 4 A for 10 ms, repeatable every 3 s
- 0.5 mA max.

**OFF-state leakage current**
100% tested at 850 V DC for 1 s between plant and system. No isolation between individual channels

**Isolation voltage**
- Output signal delay: 0.4 ms max.
- OFF to ON: 0.2 ms max.
- OFF to ON: 73 mA max.
- Power dissipation: 5.5 W at 31.2 V DC max.
- Unit identity: 19DH
- Backplane key code: 2

**Humidity**
- Max. 5–95%, non-condensing

**Order code**
200-OB8EP