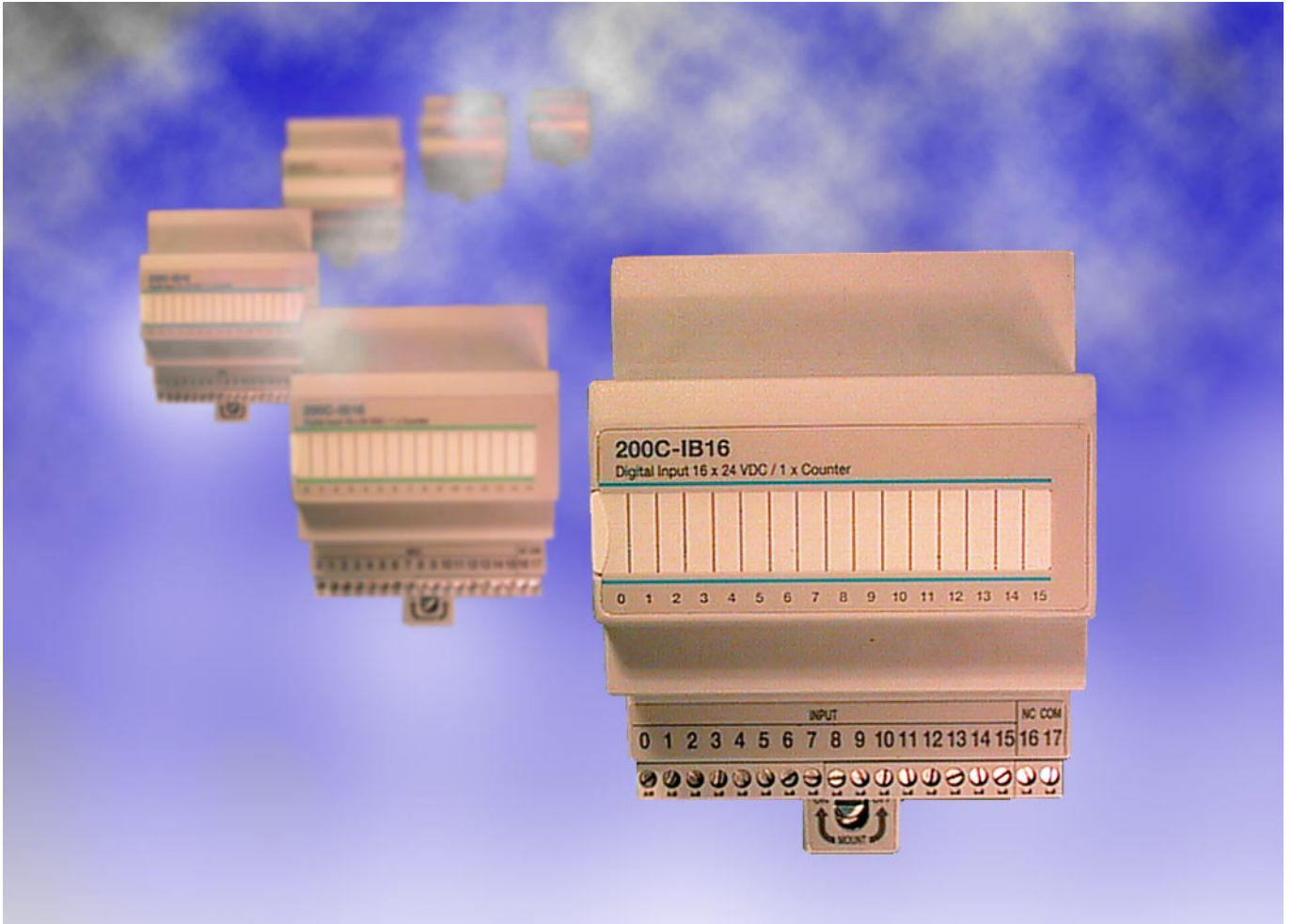


# I/O 200C



I/O 200C is a range of cost effective I/O units which are bus compatible with Series 200 I/O and can be mixed with them in any order on the same DIN rail.

I/O 200C units can be connected to controllers via adapters for various field buses. They are intended for use in industrial environments and they fulfill the EMC directive 89/336/EEC.

Up to eight I/O units can be plugged together on a DIN rail, but they can also be split into two rows by means of the extension cables CE1 or CE3.

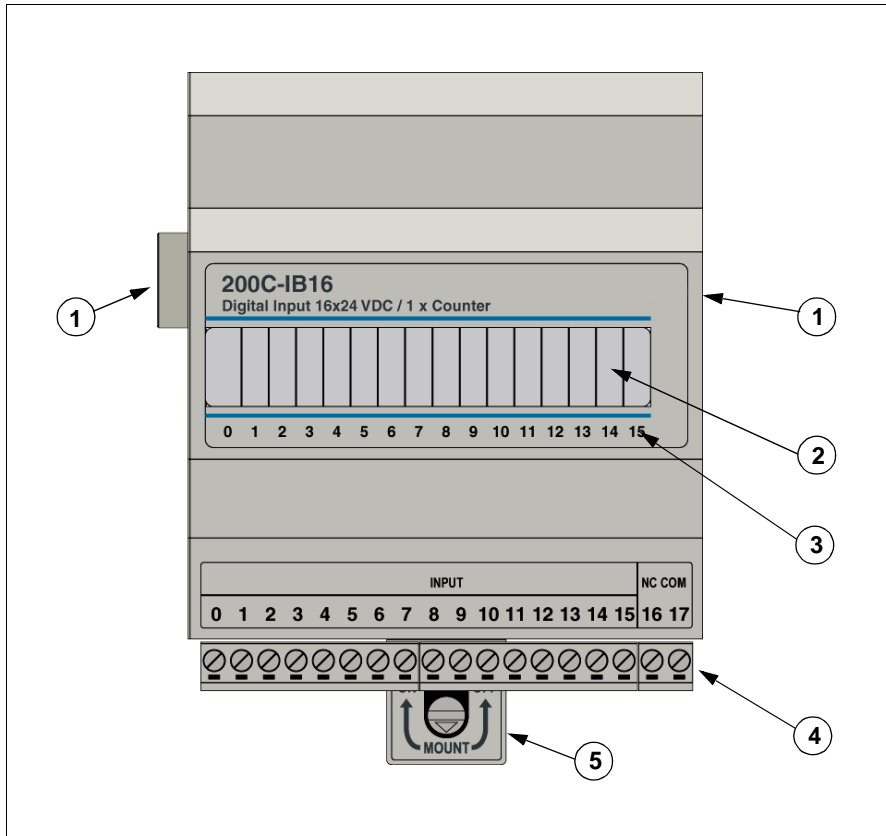
The inputs and outputs are filtered and galvanically isolated by optocouplers.

The I/O 200C system features:

- Detachable screw terminal blocks.
- CE and UL approval.
- Software configurable functions.
- Safety function on outputs in remote configuration.
- The same I/O units in central and remote configurations.
- Compatible with Series 200 I/O.



## I/O units



The use of I/O 200C 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.

1 = Serial bus connectors

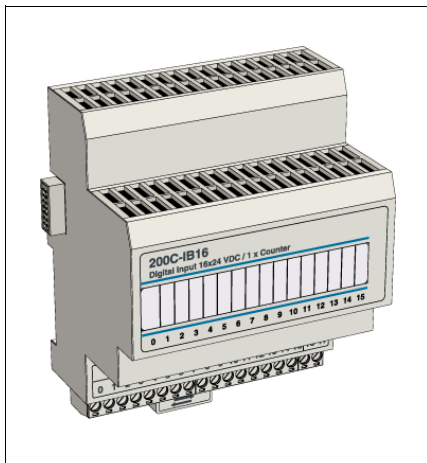
2 = Labels on which in/output designations can be written

3 = LED indicators

4 = Detachable 18-pole screw terminal block

5 = Locking device

### 200C-IB16



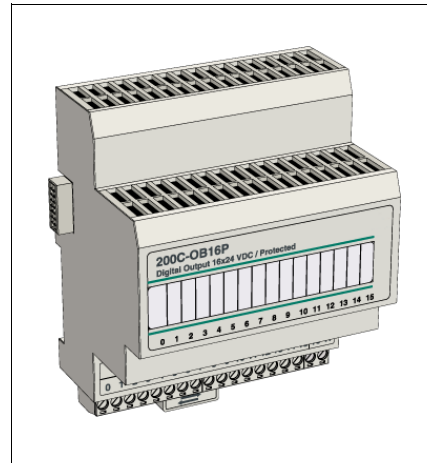
200C-IB16 is an I/O unit for 16 digital input signals, nominally 24 V DC. The unit fulfills the requirements for digital inputs according to EN 61131-2 type 1. The inputs are galvanically isolated by optocouplers and share a common ground connection. They have a second-order low-pass hardware filter and a digital low-pass filter with a time constant set in the programming software.

The status of each signal is indicated by a yellow LED on the front of the unit. The LED is lit when the input is TRUE.

Input 15 can also be used as a 16-bit pulse counter.

Power for the internal logic is provided via the serial bus.

### 200C-OB16P



200C-OB16P is an I/O unit for 16 digital output signals, nominally 24 V DC.

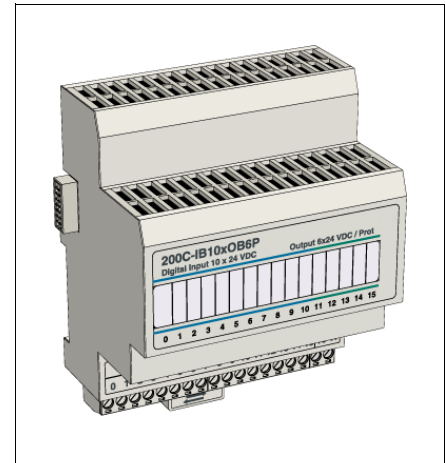
The outputs are galvanically isolated by optocouplers, short-circuit proof, and share a common ground connection.

The status of each signal is indicated by a yellow LED on the front of the unit. The LED is lit if the output is activated and the external +24 V DC power supply is present.

Outputs can be connected in parallel.

Power for the internal logic is provided via the serial bus.

### 200C-IB10xOB6P



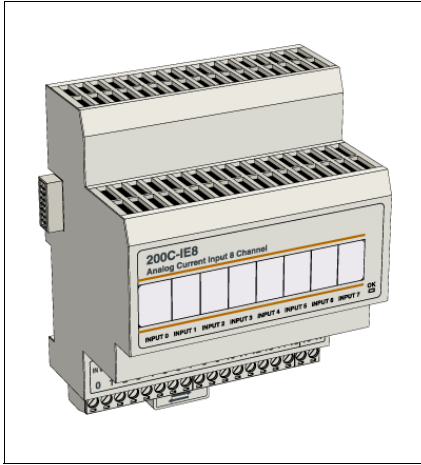
200C-IB10xOB6P is an I/O unit for 10 digital input and 6 digital output signals, nominally 24 V DC. All I/O signals are galvanically isolated by optocouplers and share a common ground connection. Outputs are short-circuit proof.

The status of each signal is indicated by a yellow LED on the front of the unit. The output LEDs require the presence of the external +24 V power supply to function.

Outputs can be connected in parallel.

Power for the internal logic is provided via the serial bus.

## 200C-IE8

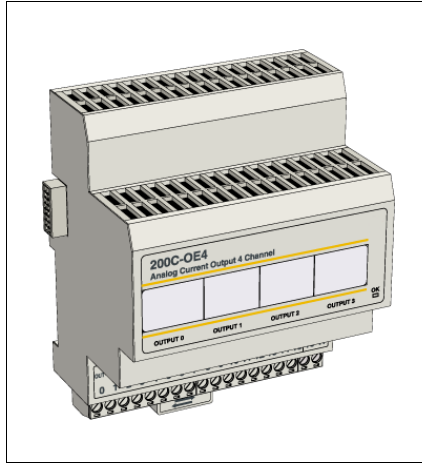


200C-IE8 is an I/O unit for 8 analog single-ended input signals. The inputs are low-pass filtered, galvanically isolated from the serial bus by optocouplers and share a common ground connection. The internal logic requires an external +24 V DC power supply.

A common LED indicates correct operation with a green light and failure with red.

The input current range 4–20 mA or 0–20 mA is set in the programming software individually for each input.

## 200C-OE4

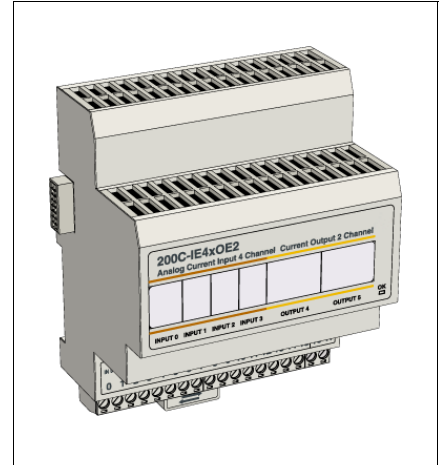


200C-OE4 is an I/O unit for 4 analog single-ended output signals. The outputs are low-pass filtered, galvanically isolated from the serial bus by optocouplers and share a common ground connection. The internal logic requires an external +24 V DC power supply.

A common LED indicates correct operation with a green light and failure with red.

The output current range 4–20 mA or 0–20 mA is set in the programming software individually for each output.

## 200C-IE4xOE2

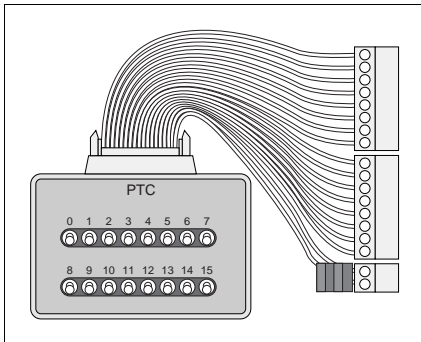


200C-IE4xOE2 is an I/O unit for 4 analog single-ended input signals and 2 analog single-ended output signals. All signals are low-pass filtered, galvanically isolated from the serial bus by optocouplers and share a common ground connection. The internal logic requires an external +24 V DC power supply.

A common LED indicates correct operation with a green light and failure with red.

The current range 4–20 mA or 0–20 mA is set in the programming software individually for each input/output.

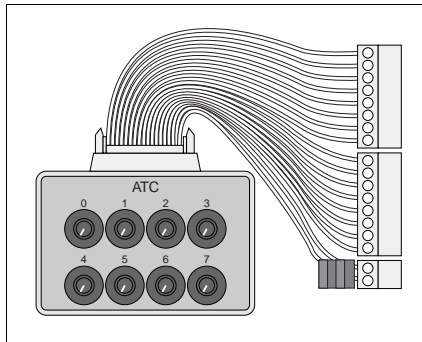
## Test Unit PTC



PTC is a test unit which simulates 16 digital input signals by means of switches numbered 0-15. A flat cable is supplied with 2 eight-pole terminal blocks which can be directly plugged into the digital input unit 200C-IB16 after its detachable terminal blocks have been removed. A two-pole terminal block is provided with extra connection pins to connect the 24 V DC process power supply cable.

The ten inputs of the unit 200C-IB10xOB6P can easily be simulated, if it is observed not to activate signals from the test unit to the outputs.

## Test Unit ATC



ATC is a test unit which simulates 8 analog input signals by means of potentiometers numbered 0-7. A flat cable is supplied with 2 eight-pole terminal blocks which can be directly plugged into the analog input unit 200C-IE8 after its detachable terminal blocks have been removed. A two-pole terminal block is provided with extra connection pins to connect the 24 V DC process power supply cable.

One of the terminal blocks with its corresponding potentiometers can also be used to simulate the four inputs of the input/output unit 200C-IE4xOE2.

The current range is 2.5 - 21.5 mA.

## Technical Data

### General Specifications

<b>Power supply</b>	+24 V DC (19.2–30 V DC) incl. 5% ripple according to EN 61132-2 type 1 standard i.e. +20%, –15% and max. 5% ripple
<b>Isolation voltage</b>	Type-test voltage 350 V AC during 1 minute
<b>Environment conditions</b>	Industrial
<b>Temperature</b>	
Operating	+5 °C to +55 °C
Storage	–25 °C to +70 °C
<b>Relative humidity</b>	5 to 95%, non-condensing
<b>Protection class</b>	IP20
<b>Approvals (when product or packaging is marked)</b>	CE-marked and meets the EMC directive 89/336/EEC. UL listed according to UL 508.
<b>Dimensions</b>	H 131 x W 94 x D 67 mm
<b>Weight</b>	240 g excl. package 324 g incl. package

### 200C-OB16P

<b>Number of outputs</b>	16 positive logic, short-circuit proof
<b>Galvanic isolation</b>	By means of optocouplers
<b>Status indicators</b>	16 yellow LEDs for output indication
<b>ON-state output voltage</b>	19 V DC min., 24 V DC nominal, 30 V DC max.
<b>Output current per unit</b>	7 A max.
<b>ON-state current per output</b>	1.0 mA min. 600 mA max.
<b>Surge current</b>	Limited to a value between 0.7 A and 1.5 A.
<b>OFF-state voltage</b>	5 V DC max. (if load resistance max. 10 k $\Omega$ ), 30 V DC max. (if no load connected)
<b>OFF-state leakage current</b>	< 0.5 mA
<b>ON-state voltage drop</b>	< 0.15 V DC at 600 mA load current
<b>Output signal delay</b>	
OFF to ON	< 70 $\mu$ s
ON to OFF	< 350 $\mu$ s
<b>External DC power</b>	
Supply voltage	24 V DC nom. (19.2–30 V)
Supply current	4 mA + 5 mA per activated output + total load current
<b>Internal current consumption (from serial bus)</b>	< 70 mA
<b>Power dissipation</b>	5 W max. at 30 V DC with all outputs activated and 7 A total load current
<b>Unit identity</b>	0115H
<b>Order code</b>	200C-OB16P

### 200C-IB16

<b>Number of inputs</b>	16 positive logic
<b>Counter input</b>	16-bit, up to 5000 Hz on input 15, reset on power-up and by user programming
<b>Galvanic isolation</b>	by means of optocouplers
<b>Status indicators</b>	16 yellow LEDs for input indications
<b>ON-state input voltage</b>	15 V DC min., 24 V DC nominal, 30 V DC max.
<b>ON-state input current</b>	3.0 mA min. at 15 V DC, 5.2 mA nominal at 24 V DC, 6.8 mA max. at 30 V DC
<b>OFF-state input voltage</b>	< 6.0 V DC
<b>OFF-state input current</b>	< 1.6 mA
<b>Input impedance</b>	6.2 k $\Omega$ max.
<b>Digital filter</b>	Time constant set in software
<b>Hardware filter</b>	Second-order, low-pass filter Time constant 70 $\mu$ s Input pulse width 90 $\mu$ s min.
<b>Internal current consumption (from serial bus)</b>	< 25 mA
<b>Power dissipation</b>	3.5 W max. at 30 V DC with all inputs activated
<b>Unit identity</b>	0210H
<b>Order code</b>	200C-IB16

## 200C-IB10xOB6P

### General specifications:

<b>Galvanic isolation</b>	By means of optocouplers
<b>Status indicators</b>	16 yellow LEDs for input/output indication
<b>External DC Power</b>	
Supply voltage	24 V DC nom. (19.2–30 V DC)
Supply current	2 mA + 5 mA per activated output + total load current
<b>Internal current consumption (from serial bus)</b>	< 40 mA
<b>Power dissipation</b>	3.5 W max. at 30 V DC with all inputs and outputs activated and total load current 3.6 A
<b>Unit identity</b>	0114H
<b>Order code</b>	200C-IB10xOB6P

### Input specifications:

<b>Number of inputs</b>	10 positive logic
<b>ON-state input voltage</b>	15 V DC min., 24 V DC nominal, 30 V DC max.
<b>ON-state input current</b>	3.0 mA min. at 15 V DC, 5.2 mA nominal at 24 V DC, 6.8 mA max. at 30 V DC
<b>OFF-state input voltage</b>	< 6.0 V DC
<b>OFF-state input current</b>	< 1.6 mA
<b>Input impedance</b>	6.2 k $\Omega$ max.
<b>Digital filter</b>	Time constant set in software
<b>Hardware filter</b>	Second-order, low-pass filter, time constant 70 $\mu$ s, input pulse width 90 $\mu$ s min.

### Output specifications:

<b>Number of outputs</b>	6 positive logic, short-circuit proof
<b>ON-state voltage</b>	19 V DC min., 24 V DC nominal, 30 V DC max.
<b>Output current per unit</b>	3.6 A max.
<b>ON-state current per output</b>	1.0 mA min. 600 mA max.
<b>Surge current</b>	Limited to a value between 0.7 A and 1.5 A.
<b>OFF-state voltage</b>	5 V DC max. (if load resistance max 10 k $\Omega$ ) 30 V DC max. (if no load connected)
<b>OFF-state leakage current</b>	< 0.5 mA
<b>ON-stage voltage drop</b>	< 0.15 V DC at 600 mA load current
<b>Output signal delay</b>	
OFF to ON	< 70 $\mu$ s
ON to OFF	< 350 $\mu$ s

## 200C-IE8

<b>Number of inputs</b>	8 single-ended
<b>Galvanic isolation</b>	Serial bus is isolated from inputs by optocouplers
<b>Crosstalk between inputs</b>	-70 dB
<b>Status indicators</b>	One green/red LED for Power/Fault indication
<b>Input current range</b>	4–20 mA or 0–20 mA
<b>Input resistance</b>	205 $\Omega$ $\pm$ 0.2%
<b>Filter</b>	Third-order, low-pass filter with time constant 14 ms
<b>Resolution</b>	12 bits
<b>Non-linearity</b>	< 0.05% according to ISA-RP55.1
<b>Accuracy at 25°</b>	$\pm$ 0.3% at full scale
<b>Drift with temperature</b>	< $\pm$ 0.005% of full scale per $^{\circ}$ C
<b>Repeatability</b>	$\pm$ 0.05% of full scale
<b>Overload without damage</b>	32 mA max. continuously, only one input at a time
<b>External DC Power</b>	
Supply voltage	24 V DC nom. (19.2–30 V)
Supply current	Approx. 40 mA at 24 V DC
<b>Internal current consumption (from serial bus)</b>	20 mA max.
<b>Power dissipation</b>	< 3 W at 30 V DC
<b>Unit identity</b>	1901H
<b>Order code</b>	200C-IE8

## 200C-OE4

<b>Number of outputs</b>	4 single-ended
<b>Galvanic isolation</b>	Serial bus is isolated from outputs by optocouplers
<b>Status indicator</b>	One green/red LED for power / fault indication
<b>Output current range</b>	4–20 mA or 0–20 mA
<b>Output load resistance</b>	0–550 $\Omega$ at 19.2 V power supply 0–850 $\Omega$ at 24 V power supply 0–1100 $\Omega$ at 30 V power supply
<b>Filter</b>	Third-order low-pass filter with time constant 14 ms
<b>Resolution</b>	11 bits
<b>Non-linearity</b>	< 0.1% according to ISA-RP55.1
<b>Accuracy at 25 <math>^{\circ}</math>C</b>	$\pm$ 0.5% of full scale
<b>Drift with temperature</b>	< $\pm$ 0.005% of full scale per $^{\circ}$ C
<b>External DC Power</b>	
Supply voltage	24 V DC nom. (19.2–30 V DC)
Supply current	Approx. 100 mA at 24 V DC (not including outputs)
<b>Internal current consumption (from serial bus)</b>	20 mA max.
<b>Power dissipation</b>	< 3 W at 30 V DC
<b>Unit identity</b>	1100H
<b>Order code</b>	200C-OE4

## 200C-IE4xOE2

### General specifications:

<b>Galvanic isolation</b>	Serial bus is isolated from in/ outputs by optocouplers
<b>Crosstalk between inputs</b>	-70 dB
<b>Status indicator</b>	One green/red LED for power/fault indication
<b>External DC Power</b>	
Supply voltage	24 V DC nom. (19.2–30 V DC)
Supply current	Approx. 60 mA at 24 V DC (not including outputs)
<b>Internal current consumption (from serial bus)</b>	20 mA max.
<b>Power dissipation</b>	< 3 W at 30 V DC
<b>Unit identity</b>	1500H
<b>Order code</b>	200C-IE4xOE2

### Input specifications:

<b>Number of inputs</b>	4 single-ended
<b>Input current range</b>	4–20 mA or 0–20 mA
<b>Input resistance</b>	205 $\Omega$ $\pm$ 0.2%
<b>Filter</b>	Third-order, low-pass filter with time constant 14 ms
<b>Resolution</b>	12 bits
<b>Non-linearity</b>	< 0.05% according to ISA-RP55.1
<b>Accuracy at 25 °C</b>	$\pm$ 0.3% of full scale
<b>Drift with temperature</b>	< $\pm$ 0.005% of full scale per °C
<b>Repeatability</b>	$\pm$ 0.05% of full scale
<b>Overload without damage</b>	32 mA max. continuously, only one input at a time

### Output specifications:

<b>Number of outputs</b>	2 single-ended
<b>Output current range</b>	4–20 mA or 0–20 mA
<b>Output load resistance</b>	0–550 $\Omega$ at 19.2 V power supply 0–850 $\Omega$ at 24 V power supply 0–1100 $\Omega$ at 30 V power supply
<b>Filter</b>	Third-order low-pass filter with time constant 14 ms
<b>Resolution</b>	11 bits
<b>Non-linearity</b>	< 0.1% according to ISA-RP55.1
<b>Accuracy at 25 °C</b>	$\pm$ 0.5% of full scale
<b>Drift with temperature</b>	< $\pm$ 0.005% of full scale per °C

## Grounding Clamp Holder

<b>Connectors</b>	Two female I/O bus connectors
<b>Dimensions</b>	H 10 x W 92 x D 13 mm
<b>Weight</b>	30 g
<b>Order code</b>	200C-GCH

The holder is used to support grounding clamps for shielded process cables to I/O 200C units.

### Test Unit PTC

<b>Number of simulated signals</b>	16
<b>Number of switches</b>	16
<b>Terminal blocks</b>	8 + 8 + 2 poles
<b>Cable length</b>	150 mm
<b>Power supply</b>	24 DC nominal
<b>Output signal voltage</b>	+24 V DC nominal
<b>Dimensions</b>	H 55 x W 84 x D 58 mm
<b>Weight</b>	180 g incl. cable
<b>Order code</b>	PTC

### Test Unit ATC

<b>Number of simulated signals</b>	8
<b>Number of potentiometers</b>	8
<b>Terminal blocks</b>	8 + 8 + 2 poles
<b>Cable length</b>	150 mm
<b>Power supply</b>	24 DC nominal
<b>Output signal range</b>	2.5 - 21.5 mA
<b>Dimensions</b>	H 55 x W 39 x D 56 mm
<b>Weight</b>	180 g incl. cable
<b>Order code</b>	ATC

