





SYNCHROTACT 6

Functions, options and ordering details

Functions at a glance

| Function | Type | | | |
|--|---|---|---|---|
| Product |  |  |  |  |
| | SYN 6200 | SYN 6201 | SYN 6202 | SYN 6302 |
| Automatic synchronizing | Yes | Yes | Yes | Yes |
| Paralleling of two lines | Yes | Yes | Yes | Yes |
| Synchrocheck mode | Yes | Yes | Yes | Yes |
| Voltage matching | No | Yes | Yes | Yes |
| Frequency matching | No | Yes | Yes | Yes |
| Dual-channel system | No | No | Yes | Yes |
| Integrated, redundant system (bypass) | No | No | No | Yes |
| Number of parameter sets | either 2 or 20 | either 2 or 20 | either 2 or 20 | either 2 or 20 |
| Paralleling of synchronous lines | Yes | Yes | Yes | Yes |
| Paralleling of asynchronous lines | Yes | Yes | Yes | Yes |
| Paralleling of voltage-free lines | Yes | Yes | Yes | Yes |
| Signaling | Yes | Yes | Yes | Yes |
| Parameter setting by PC Tool SynView 6 | Yes | Yes | Yes | Yes |
| Parameter setting without PC | Yes | Yes | Yes | Yes |
| Semi-flush mounting (standard) | Yes | Yes | Yes | Yes |
| Surface mounting | on request | on request | on request | on request |
| Top-hat rail mounting (DIN) | No | No | No | No |

Options

| Option | SYN 6200, SYN 6201, SYN 6202, SYN 6302 |
|--------|---|
| w | Communication (operating interface) 0 none 1 IEC 61850 station bus, electrical 2 IEC 61850 station bus, optical 4 Modbus RTU 5 Profibus DP |
| x | Internal code 2 |
| y | Internal code 0 |
| z | Functionality 2 Basic (2 parameter sets) 3 Extended (20 parameter sets, Tap changer control) |

| Device type | Options |
|-------------|---------|
| SYN 6u0v | - wxyz |

Ordering details

| Examples | |
|-----------------|--|
| SYN 6200 – 0202 | Synchrocheck with two parameter sets |
| SYN 6201 – 0203 | Automatic single-channel synchronizing device with twenty parameter sets |
| SYN 6202 – 1203 | Automatic dual-channel synchronizing device with communication (IEC61850 electrical) and twenty parameter sets |
| SYN 6302 – 2203 | Redundant automatic dual-channel synchronizing device with communication (IEC 61850 optical) and twenty parameter sets |

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Option details

Option w: Communication

| Characteristics of the field bus protocols | |
|--|---|
| Supported protocols | MODBUS RTU; PROFIBUS DP |
| Interface type | Configurable: RS 232/RS 485 |
| Connector type | D-Sub9 (female) |
| Transmitted signals | Compatible with SYNCHROTACT 5; Binary inputs/outputs; status indicators (LEDs); actual values (analog) |
| Addressing | Slave address depending on fieldbus |

SYN 6302:

The interfaces are duplicated, ie, each device can be controlled individually. The write commands ("controls,")

| Characteristics of the IEC 61850 interface | |
|--|--|
| Interface type | Ethernet |
| Connector type | RJ45 or LC |
| Transmitted signals | Digital I/Os (status information/controls); actual values (measured values) |

START, STOP, Release DB and Reset must only be sent to one of the devices. Write commands for the configurable inputs (BIN) have to be given separately for each device.

Option z: Functionality

SYNCHROTACT 6 – devices with basic functionality (z = 2) contain the basic functions listed below. SYNCHROTACT 6 –

devices with extended functionality (z = 3) contain the basic and additional functions (shown below).

Basic functions:

Configurable functions of binary inputs

- Selection of parameter set or paralleling point
- Selection of TEST mode
- Starting, stopping and blocking of synchronizing process
- Device Reset

Configurable functions of binary outputs

- Selection or acknowledgment of paralleling point/parameter set
- Switchover contact that switches the command circuit in series with the manual paralleling switch in synchrocheck mode
- Signaling of the following variables:
 - Paralleling command in TEST mode
 - Dead bus released
 - Active STOP on the input
 - Phase-angle difference within tolerance band
 - Slip within tolerance band
 - Voltage difference within tolerance band
 - Paralleling command released
 - U1 leading or lagging
 - $f_2 > f_1$; $f_2 < f_1$
 - $U_2 > U_1$; $U_2 < U_1$
 - U1 or U2 outside of permissible range
 - Monitoring of the CMD contacts triggered
 - Single device operation (only SYN 6302)

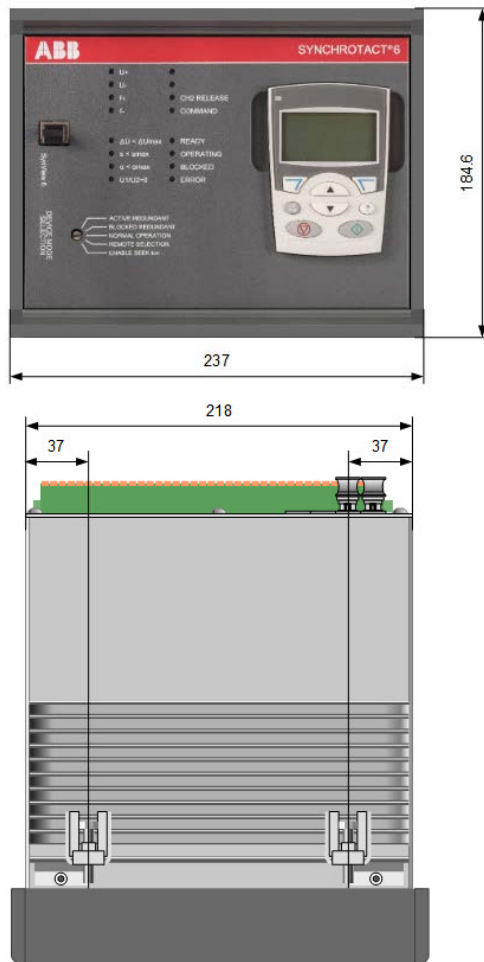
Additional functions:

- Selection of 20 parameter sets
- Tap changer control

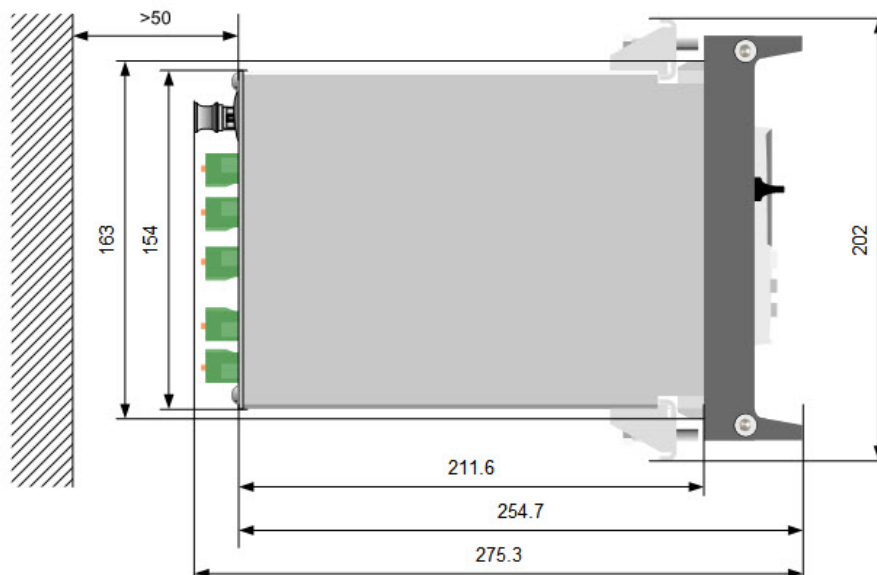
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Dimension diagrams

SYN 6200
SYN 6201
SYN 6202



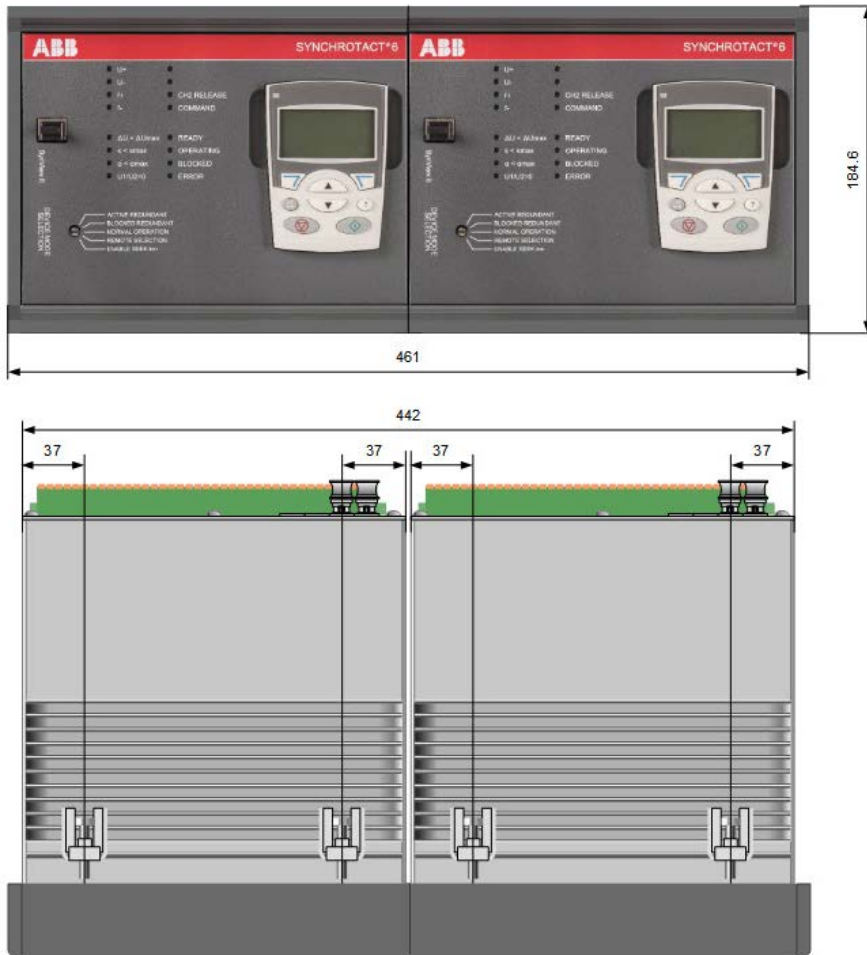
Panel cut-out W x H = 222 mm x 164 mm



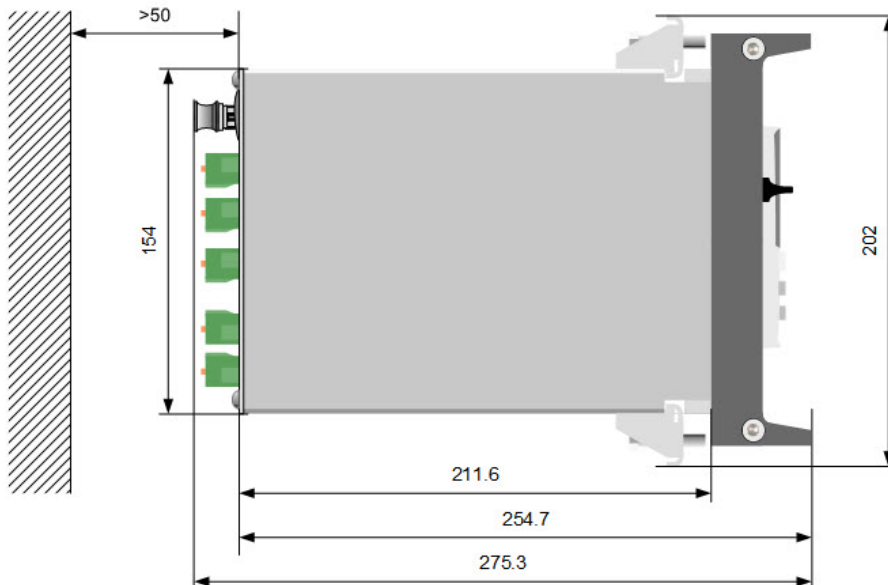
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Dimension diagrams

SYN 6302



Panel cut-out W x H = 443 mm x 155 mm



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Technical data

Relevant standards

| CE-conformity | |
|---|------------------|
| EMC directive | 2014/30/EU |
| Related product standard | EN 60255-26 |
| Low-voltage directive | 2014/35/EU |
| Related product standard | EN 60255-27 |
| Product standards | |
| Measuring relays and protection equipment | IEC 60255-1 |
| EMC requirements for measuring relays and protection equipment | IEC60255-26 |
| Safety requirements for measuring relays and protection equipment | IEC60255-27 |
| Hydro Québec standard for electronic equipment and relays | SN-62.1008-1 |
| IEEE standard for relays | IEEE C37.90-2005 |
| Functional safety of E/E/PE safety-related systems | IEC 61508-series |

Inputs

| Auxiliary voltage | |
|-------------------------------|--|
| Nominal voltage range | 24 to 250 VDC 100 to 230 VAC |
| Permissible voltage range | 19.2 to 300 VDC 75 to 300 VAC |
| SYN 620v Power consumption | READY 22 W/35 VA OPERATING 24 W/37 VA |
| SYN 6302 Power consumption | READY 2 x 22 W/35 VA OPERATING 2 x 24 W/37 VA |
| Measuring inputs U1, U2 | |
| Nominal voltage range | 50 to 130 VAC |
| Voltage range | 0 to 130 %Un |
| Nominal frequency | 16 ² / ₃ , 50, 60 Hz |
| Frequency range | 10 to 100 Hz |
| Binary inputs | |
| Nominal voltages | 24 to 125 VDC 100 to 125 VAC |
| Current consumption | ≤ 2 mA |

Construction data

| Degree of protection in accordance with IEC 60529 | |
|---|------------------------|
| | IP 50 |
| Dimensions | |
| SYN 6200, SYN 6201, SYN 6202 | See dimension Diagrams |
| SYN 6302 | |
| Weight | |
| SYN 6200, SYN 6201, SYN 6202 | 7 kg net/10 kg gross |
| SYN 6302 | 14 kg net/22 kg gross |

Outputs

| Paralleling relays | |
|--|-----------------|
| Maximum contact voltage | 250 VAC/250 VDC |
| Limiting continuous current | 10 A |
| Maximum switching power ON | 3000 VA/3000 W |
| Maximum switching power OFF (resistive) | 3000 VA/85 W |
| Adjusting command and signaling relays | |
| Maximum contact voltage | 250 VAC/250 VDC |
| Limiting continuous current | 4 AAC/4 ADC |
| Maximum switching power ON/OFF (resistive) | 1000 VA/75 W |

Interface

| PC Tool 'SynView 6' Ethernet | |
|------------------------------|-------|
| Bridgeable distance | 100 m |