

# SYNCHROTACT 6

## Device types

Type	Function	Symbol
<b>SYN 6200</b>	Synchrocheck or automatic paralleling unit without matching function	
<b>SYN 6201</b>	Automatic single-channel synchronizing device	
<b>SYN 6202</b>	Automatic dual-channel synchronizing device	
<b>SYN 6302</b>	Redundant automatic dual-channel synchronizing system	

### Differences between SYN 6302 and SYN 6202

The SYN 6202 is a dual-channel system with two differently structured independent channels used as one functional system.

SYN 6302 consists of two "SYN 6202" dual-channel devices used as a redundant system. The output contacts of both devices are normally wired in series (four channels!). If one device fails, a safe switchover to the other device is possible by bypassing it. This allows paralleling to be carried out fully automatically and with maximum safety at all times. If repair or replacement of the defective device is needed, it can easily be removed from the system.

Remark: the simpler SYN 5100 from the SYNCHROTACT 5 family is not replaced. It can however be used in combination with the SYNCHROTACT 6 devices.

### Type Code

SYN 6 t 0v

#### Synchronizing mode

- 00: Synchrocheck
- 01: Single channel device
- 02: Dual channel device

#### Construction size

- 2: Medium size
- 3: Large size

#### SYNCHROTACT

- SYN: SYNCHROTACT
- 6: Sixth generation

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# SYNCHROTECT 6

## Device types

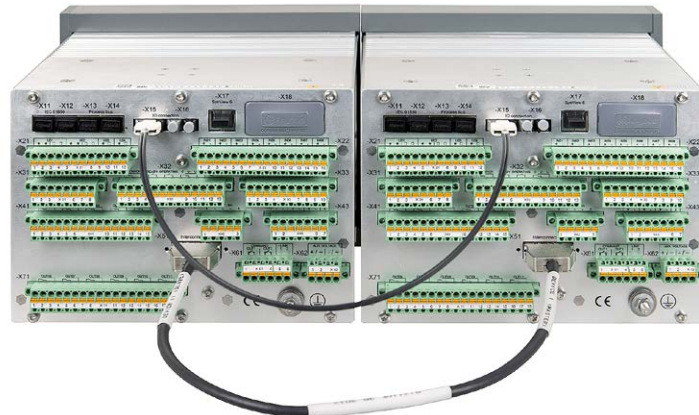
Front and rear view of  
SYN 6200  
SYN 6201  
SYN 6202



Front view of  
SYN 6302







Rear view of  
SYN 6302



# SYNCHROTACT 6

## Functions, options and ordering details

### Functions at a glance

Function	Type			
Product				
	<b>SYN 6200</b>	<b>SYN 6201</b>	<b>SYN 6202</b>	<b>SYN 6302</b>
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
  - $f2 > f1$ ;  $f2 < f1$
  - $U2 > U1$ ;  $U2 < U1$
  - 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