

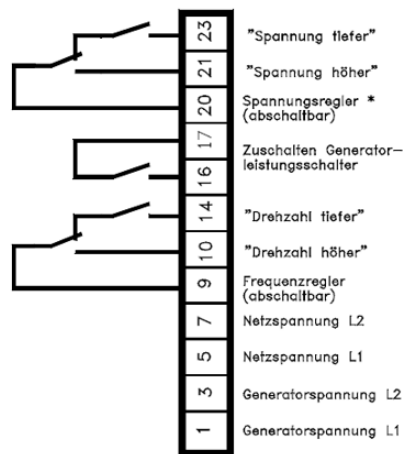
Synchronizers ASG-3, ASG-410, ASG410+ SPM-D and SPM-D2

Justin Schneider - 2026-07-27 - [SPM-D2](#)

Woodward paralleling controls were developed in the late 19 eightteens.

ASG3 was a backpanel synchronizer mounted on a orange metal plate

replacement was ASG4E3100



Voltage down U-
Voltage up U+
Voltage regulation on/off
GCB close command
Speed down f-
Speed up f+
Frequency regulation on/off
Mains voltage L2
Mains voltage L1
Generator voltage L2
Generator volatage L1

ASG410 up to serial number <38495

had a aluminum frontplate with white push buttons



After the ASG410+ was launched with minor differences in wiring, plastic foil frontplate and pushbuttons criss-crossed.



- new unit (ASG 410+ → starting with device number 38495)

please connect the unit according to the following table.

Terminal number		Description
NEW ASG 410+	OLD ASG 4101/4104	
		NEW..starting with unit number 38495 OLD..up to unit number 38494 Switch in July 1996
0	0	Power supply N/PE
1	1	Power supply +24 V DC
2	2	Power supply 0 V DC
3	3	GCB release
4	4	Reply: GCB is open
5	5	Release isolated operation
6	6	Input mode blocked
7	0	Common for terminals 3, 4, 5 and 6
8	7	Common for the frequency controller
9	8	Frequency higher f+
10	9	Frequency lower f-
11	10	Common for the voltage controller
12	11	Voltage higher V+
13	12	Voltage lower V-
14	13	Synchronization pulse GCB
15	14	
16	x	
17	x	
18	17	Readiness for operation
19	18	
20	19	Generator voltage V_{L1}
21	20	Generator voltage V_{L2}
22	x	
23	21	Mains voltage V_{L1}
24	22	Mains voltage V_{L2}

In 2001 Leonhard-Reglerbau was merged with Woodward and the ASG410+ Line was converted into SPM-D



In 2016 the SPM-D2 was introduced which is a 1:1 drop-in replacement



ASG4 & SPM-D replacement partnumbers can be get here:

<https://easygen.org/legacy-product-replacement/>