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

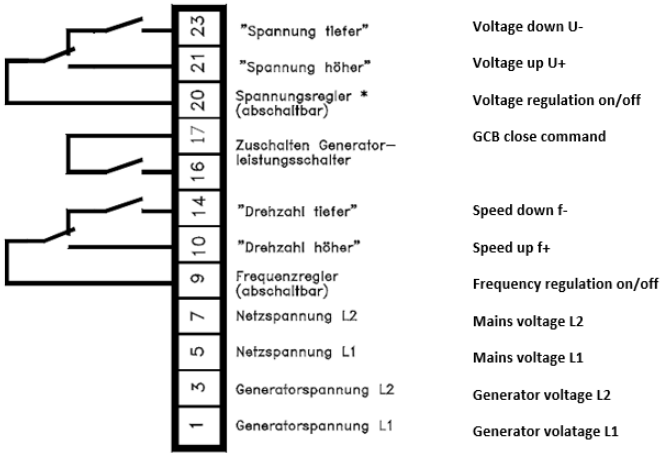
Clemens - 2022-07-25 - SPM-D2

Woodward paralleling controls were developped in the late 19 eightteens.

ASG3 was a backpanel synchronizer mounted on a orange metal plate

replacement was ASG4E3100





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	**OLD**	**NEW**..starting with unit number 38495	Switch in July 1996
ASG 410**+**	ASG 4101/4104	**OLD**..up to unit number 38494	
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/