



SPM-D10 Series

One Breaker Synchronizer

APPLICATIONS

The SPM-D10 is a microprocessor-based synchronizer designed for use on three phase AC generators equipped with Woodward or other compatible speed controls and automatic voltage regulators. The SPM-D10 synchronizer provides automatic frequency, phase and voltage matching using either analog- or discrete output bias signals.

The [HJV](#) Package provides additional mains protection.

Part-No. 8440-1668 SPM-D1040B/**XN** is a direct replacement of the SPM-A synchronizer.

DESCRIPTION

Synchronizing

- Phase match or slip frequency synchronization with voltage matching
- Two-phase sensing of generator and bus
- Selectable operating modes like SPM-A (Run, Check, Permissive, and OFF)
- Synchro-check possible
- Synchronization time monitoring

Isolated operation

- Frequency control
- Voltage control

Dead bus operation

- Closing of CB on demand

FURTHER SPM-D SYNCHRONIZERS

- The SPM-D10/YB Series provides three-phase generator and bus measurement refer to product specifications 37298 for more information
- The SPM-D11 Series provides load/var sharing refer to product specifications 37292 for more information
- The SPM-D21 Series provides synchronizing for two circuit breakers and load control refer to product specifications 37293 for more information

DESCRIPTION

Protection

HJV Packages

- Three-phase sensing of mains voltage
- Mains over-/undervoltage (59/27)
- Mains over-/underfrequency (81O/U)
- Mains phase/vector shift (78)

Control outputs

Standard

- Discrete raise/lower for speed
- Discrete raise/lower for voltage

X & XN Packages

- Analog bias outputs for voltage and speed freely configurable for all levels (+/-1 V, +/-3 V, 0 to 5 V, 0.5 to 4.5 V, +/-10 V +/-5 V, 0 to 20 mA, +/-20 mA, and much more configurable)
- Speed bias output configurable as 500 Hz PWM output with adjustable voltage level
- Two raise/lower outputs configurable for either speed or voltage

Operating Features

- Two-line Liquid Crystal display for operation and alarm indication
- Synchroscope
- Indication of control activity and breaker state
- Multi-level password protection for parameters
- Configuration directly or via PC
- English or German language adjustable

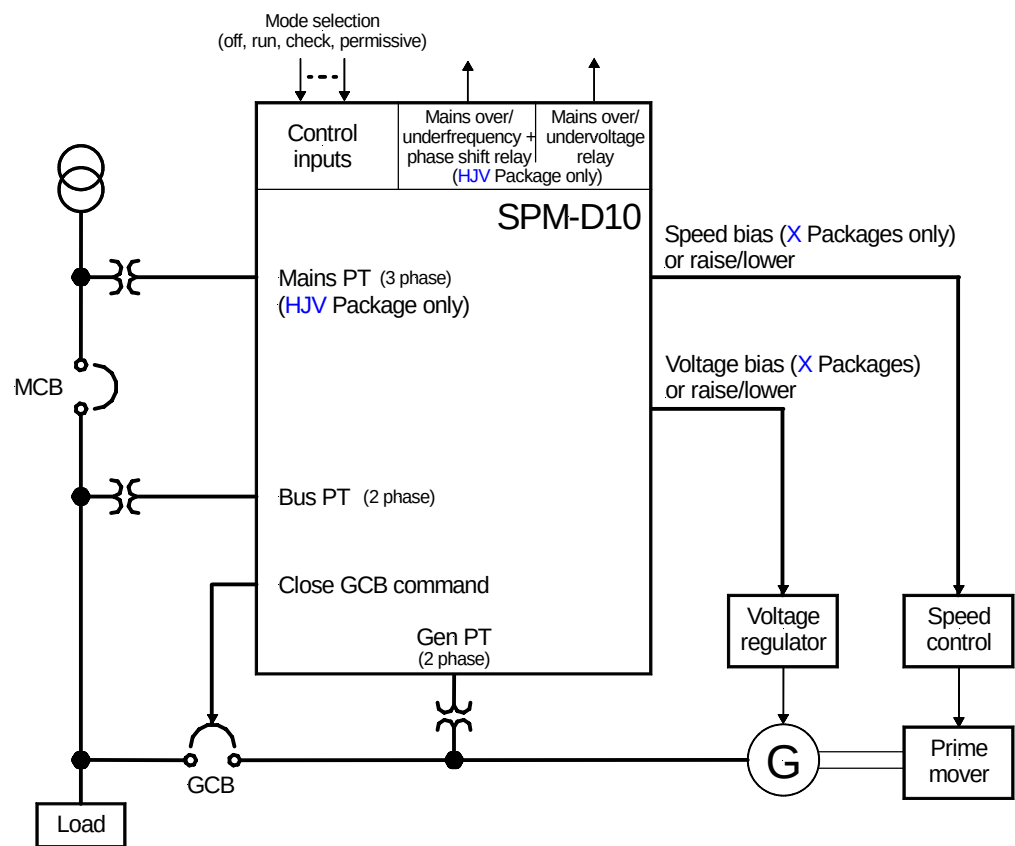
ANSI #

- Synchronization for one circuit breaker
- Frequency, phase, and voltage matching
- Selectable types of control output
- Digital display of generator and bus values
- Microprocessor technology for flexible and reliable operation
- Wide range power supply available
- Additional mains protection and display of mains values available
- PC and front panel configurable
- CE marked
- UL/cUL Listed

Relay outputs	isolated
Contact material	AgCdO
Load (GP).....	2.00 Aac@250 Vac
	2.00 Adc@24 Vdc / 0.36 Adc@125 Vdc / 0.18 Adc@250 Vdc
Pilot duty (PD)	
	1.00 Adc@24 Vdc / 0.22 Adc@125 Vdc / 0.10 Adc@250 Vdc
Housing.....	Type APRANORM DIN 43 700
Dimensions	144×72×122 mm
Front cutout	138[+1.0]×67[+0.7] mm
Connection	screw/plug terminals depending on connector 1.5 mm² or 2.5 mm²
Front.....	insulating surface
Protection system.....	with correct installation
	Front..... IP42 (sealed IP54; gasket kit = P/N 8923-1037)
	Back..... IP21
Weight	approx. 800 g
Disturbance test (CE).....	tested according to applicable EN guidelines
Listings	UL/cUL listed (voltages up to 300 Vac)

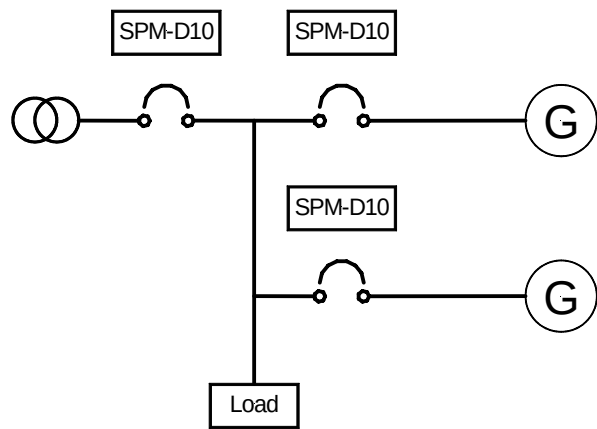


APPLICATION DIAGRAM

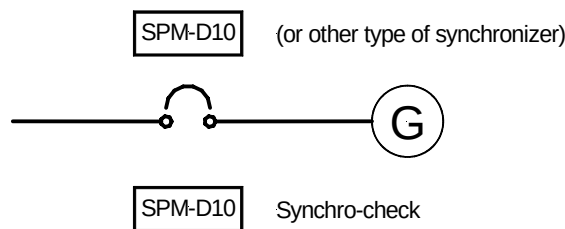


APPLICATION EXAMPLES

- generator synchronizer or mains synchronizer



- synchronizing with additional synchro-check



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Subject to technical modifications.

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37297B - 06/3/S

FEATURES OVERVIEW

SPM-D10 Series Synchronizer #1	SPM-D10	SPM-D10/X	SPM-D10/N	SPM-D10/XN	SPM-D10/HJV
Measuring/Display					
Generator voltage, 2phase	✓	✓	✓	✓	✓
Busbar voltage, 2phase	✓	✓	✓	✓	✓
Mains voltage, 3phase					✓
Control					
Breaker	1	1	1	1	1
Synchronization, 2phase	✓	✓	✓	✓	✓
Isolated operation	✓	✓	✓	✓	✓
Protection					
Mains: over-/undervoltage					✓
Mains: over-/underfrequency					✓
Mains: d ϕ /dt (phase/vector jump)					✓
Alarm relays					2
Controller					
Discrete raise/lower: speed	✓	✓ #2	✓	✓ #2	✓
Discrete raise/lower: voltage	✓	✓ #2	✓	✓ #2	✓
Analog output: speed		✓		✓	
Analog output: voltage		✓		✓	
PMW output: speed		✓		✓	
Listings/Approvals					
CE marked	✓	✓	✓	✓	✓
UL/cUL listed	✓	✓	✓	✓	✓
Accessories					
Configuration via PC #3	✓	✓	✓	✓	✓
Power supply					
24 Vdc	✓	✓			✓
Wide range 90 to 250 Vac/dc			✓	✓	
English	37215	37215	37215	37215	37215
German	GR37215	GR37215	GR37215	GR37215	GR37215
Part numbers P/N					
Measuring inputs 100 Vac	5448-890	5448-893	8440-1432	8440-1667	
Measuring inputs 400 Vac #4	8440-1019	8440-1301	8440-1433	8440-1668	8440-1458

#1 Information about the SPM-D10YB can be found in the separate product specs 37298

#2 Configurable to either speed or voltage

#3 Cable incl. software necessary (DPC)

#4 All units with 400V measuring inputs can also be used for 100V system voltage