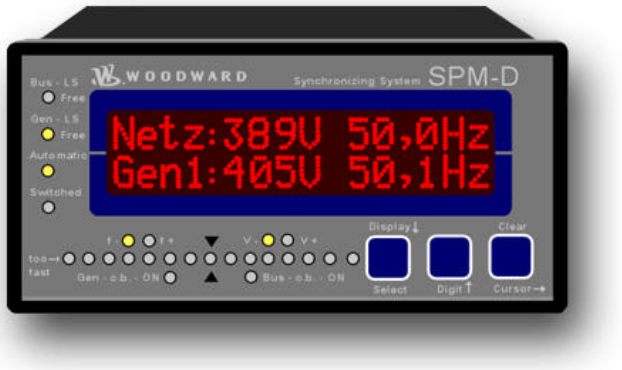
SPM–D Synchronizer



APPLICATIONS

The Woodward SPM–D is a micro processor based synchronizer designed for use on three phase AC generators equipped with Woodward or other compatible speed controls and compatible Automatic Voltage Regulators.

Optional Mains Failure Recognition and generator protection with addition of one Current Transformer input.

DESCRIPTION

Woodward's SPM–D synchronizer provides automatic frequency, phase and voltage matching using either analog- or discrete output bias signals.

Analog speed bias signals are +/–3VDC to interface directly to Woodward speed controls, analog voltage bias signals are +/–5VDC.

The optional Mains Failure Recognition includes:

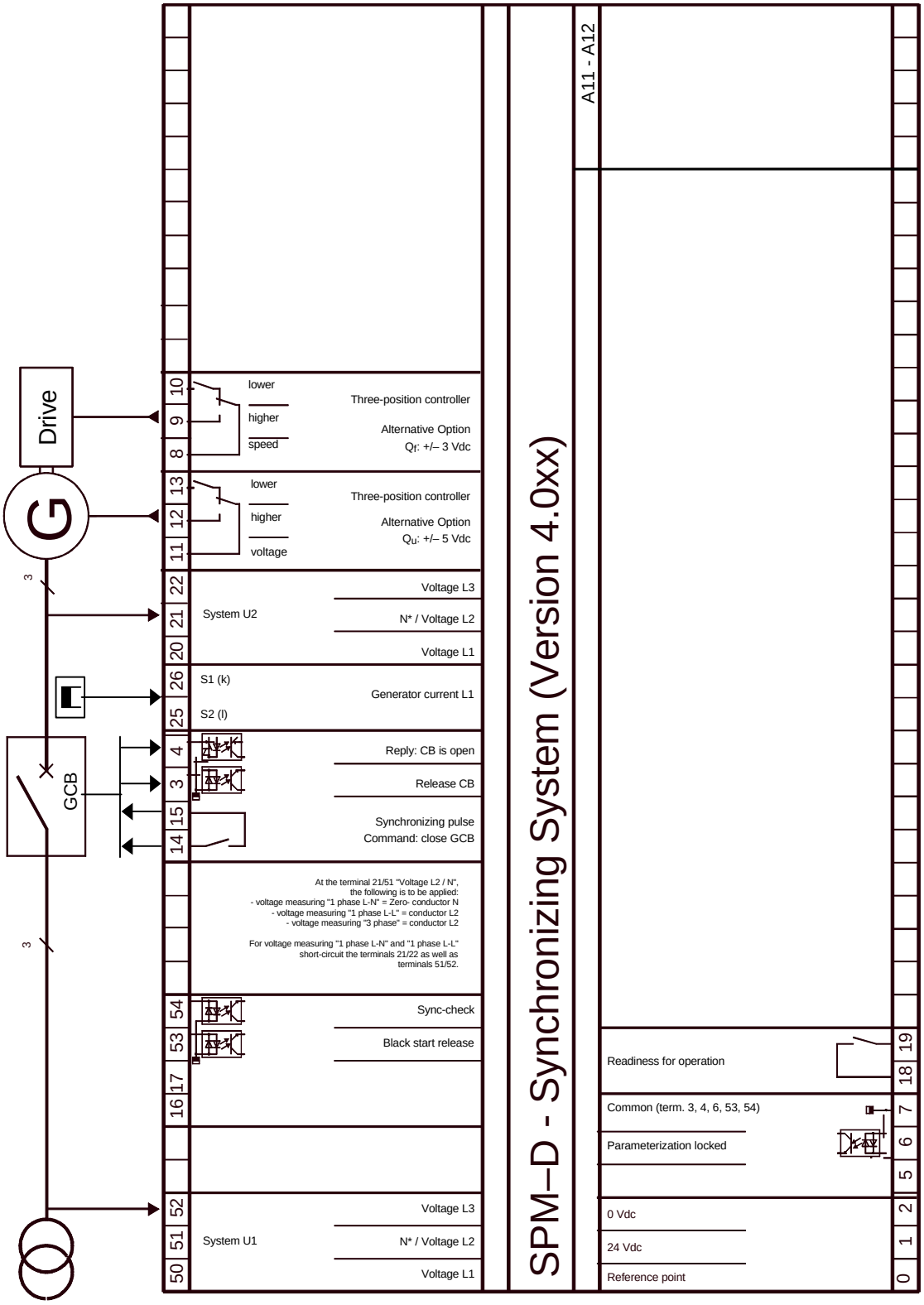
- Three phase mains over-/under voltage monitoring
- Over/under frequency monitoring
- Monitoring of phase shift

The optional Generator protection includes:

- Single phase generator over-/under voltage monitoring
- Over/under frequency monitoring
- Reverse and overload power monitoring

- UL and CSA listed
- EU directive compliant
- Available with Discrete or Analog bias outputs for frequency and voltage
- Adjustable dynamics
- Configurable for breaker or contactor
- Slip frequency synchronizing
- Dead bus connection
- LED Synchroscope
- Optional Mains Failure Recognitions
- Optional Generator protection

WIRING DIAGRAM



SPECIFICATIONS

Measuring voltage..... 110 Vac
Measuring current..... 40—70 Hz
Power supply ..... 24 Vdc (+/-25%)
Power consumptionmax. ..... 10 W
Ambient temperature ..... -20—70 °C
Ambient humidity ..... 95%, not condensing

Measuring inputs voltage.. Resistance 0.1 %
Voltage-carrying capacity..... 2.0 x V
Linear measuring range up to ..... 1.3 x V
Input resistance..... 0.174 Mohm
Max. power consumption per path ..... 0.15 W
Temperature Coefficient ..... 15 ppm/K
Max. change after endurance test..... < 0.3 %

Measuring input
Current..... Consumption < 0.15 VA
Current carrying capacity ..... 1.6 x In
Rated short time current ..... 10 x In
Reference voltage..... +/–0.15%
Max. temperature deviation..... 12 ppm/K

Digital inputs ..... metallically separated
Insulation voltage ..... min. 2,200 V_{eff}
Input range..... 18—250 Vdc or Vac
Input resistance..... 68 kΩ

Disturbance test (CE)..... tested according to applicable EN guidelines

Potential free
Outputs..... Contact material: AgCdO
Electric life cycle (ohmic load)..... min. 100,000 switching cycles at 2 A / 250 Vac
Load max. ..... 2 A at 250 Vac or 24 Vdc
Max. switching voltage ..... 250 Vac
Insulation voltage ..... 2,200 V_{eff}

Analog inputs freely scaleable resolution 10 Bit
Input 0/4..20 mA, load..... 250 Ω
Input 0..10 V, input resistance.....10 kΩ

Analog outputs..... freely scaleable for actual value output, metallically separated, insulation voltage 2,200 V_{eff} ±10 V, 0—10 V,
±20 mA, 0/4—20 mA
Resolution PWM ..... 8 Bit
Output 0/4—20 mA, max. load (V_h=24 V) 400 Ω
Output 0—10 V, ±5 V, internal resistance 1 kΩ

Housing ..... Typ APRANORM DIN 43700
Dimensions ..... 144 × 72 × 122 mm
Front cutout..... 138 × 67 mm
Connection..... Screw terminals 1.5 mm² or 2.5 mm²
..... (depending on terminal connector)

Protection system..... IP 21, front IP 54
Protection class..... II (protective insulation)
Overvoltage category III..... pollution degree 2

Weight (depending on model)..... ca. 800 g

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Distributors & Service
Woodward has an international network of distributors and service facilities. For your nearest representative call (1)(800) 835-5182 or see the Worldwide Directory on our web site.

Corporate Headquarters
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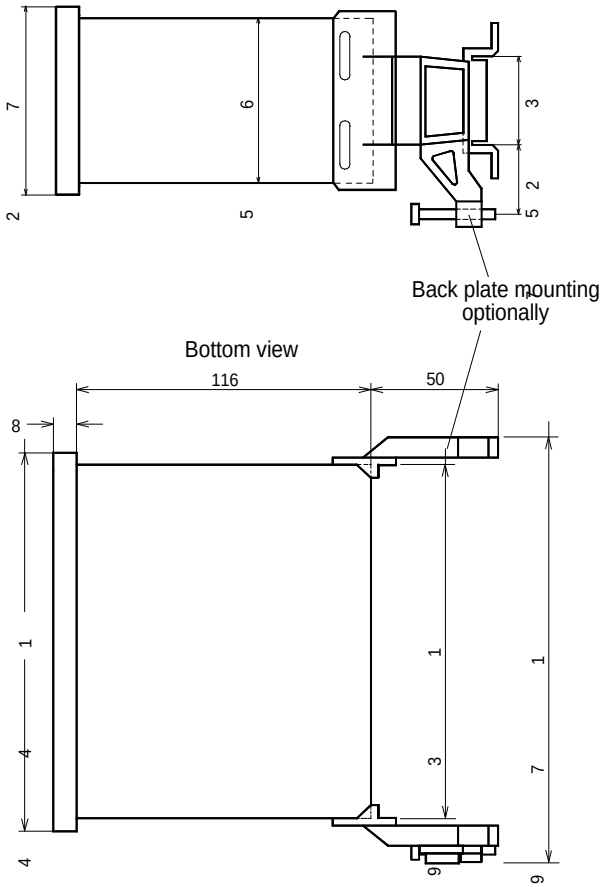
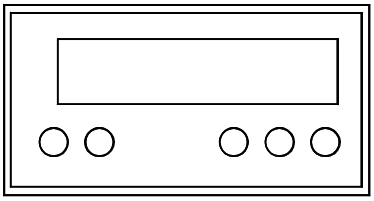
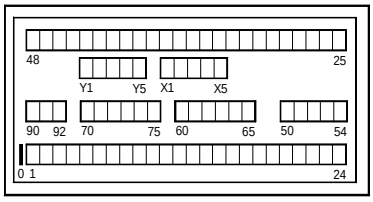
OUTLINE DRAWING



Front view



Back view with connecting terminals



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For more information contact: