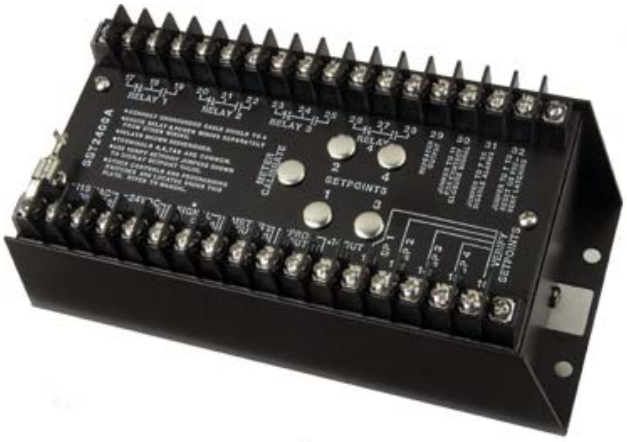
SST-2000 Speed Switches/ Transmitters

SST-2000A™ and SST-2000H™ Series Speed Switches/Trans-mitters receive signal input from a passive or active magnetic pickup, shaft encoder, contact closure, flowmeter, etc., to provide proportional analog outputs and either 0, 2, or 4 relay trip setpoints. Proven performance in the nuclear industry.

*See: THIRD PARTY APPROVALS**



***THIRD PARTY APPROVALS**

CSA *(Canadian Standards Association)*
SST-2000A Series: General certification: LR 92270
SST-2000H Series: Cl. I, Div. 2, Group C & D approval: LR45322
Approval contingent upon housing an SST-2000H Series device in a CSA-certified enclosure.

CE *(Conformité Européén)*
SST-2000A & SST-2000H
89/336/EEC, Light Industrial;
72/23/EEC, Low Voltage Directive

FEATURES

- Proportional outputs of either 4–20 mA (standard), 0–5 Vdc, or 0–10 Vdc are field-selectable.Standard 0-1 mAdc meter output included.
- Models available with up to four alarm setpoints.
- Field-selectable frequency range.
- Field-adjustable sensitivity control.
- Field-programmable for many types of sensors, including contact closure input.
- Repeater output drives counters and self-powered digital tachometers such as Dynalco's SPD-100.
- Regulated 14 Vdc output powers active pickups (e.g. M910), accessories, and digital meters such as DPM-105 or MTH-103D, and the 12 Vdc versions of the internally lighted SPD-100L and LST-100L.
- Alarms are field-configurable for DPDT (SST-2400 A or -H only), overspeed,underspeed, energize, de-energize, latch, auto-reset.
- Integral VERIFY, requires external meter. Permits viewing and setting of setpoint value without actuating the relays.
- **Input Frequency:** Full-scale values from 0–0.1Hz (6 pulses per minute) to 0–50,000 Hz.
- **Function:** Converts frequency input (speed, rate) into linear proportional dc output. Provides alarm setpoints for over- and underspeed control and for sequential, startup, and shutdown switching.
- **Applications:** Includes engines, machines, I/P drivers, instrumentation, process control, recording, measurement.
- **Signal Sources:** Includes magnetic pickups, ac generators, contact closures, photocells.
- **Output Range Capability:** Current source up to 50 mAdc.
- **Alarm Setpoints:** Available with two or four relays. Also available with no relays if only proportional outputs are required.

SPECIFICATIONS

ELECTRICAL

Input Signal Frequency Range: Standard input range is field-selectable from 0–80 Hz to 0–20 kHz. Ranges as low as 0–0.1 Hz and up to 0–50,000 Hz are available options.

Input Signal Sensitivity: Field-adjustable from approximately 5 mVrms to 100 mVrms by internal sensitivity potentiometer. Normal factory setting is 25 mVrms. Maximum permissible signal is 50 Vrms for the standard unit.

Input Impedance: Nearly infinite at low signal levels; a minimum of 10 kΩ at signal levels exceeding +15.0 V peak or –1.0 V peak.

Power: 115 Vac ±10%, 47–420 Hz/22–30 Vdc, maximum 5 W or 150 mAdc. Optional: 220 Vac, ±10%, 50/60 Hz/22–30 Vdc. Consult factory for not listed Input voltage range.

Proportional Output: 4–20 mAdc. The maximum load is 1 kΩ with the unit powered by 115/220 Vac or 30 Vdc; and 750 ohms with the unit powered by 22 Vdc. The maximum load is approximately linear between 22 Vdc and 30 Vdc. Other custom ranges are available. Option to convert to 0-5 or 0-10Vdc.

Auxiliary Meter Output: Proportional 0–1 mAdc, filtered, for meter or recorder loads up to 750 Ω.

Supply Output: Regulated +14 Vdc (±5%), at terminals 11(+) and 4(–); maximum load 40 mAdc.

Repeater Output: Square wave 14 V peak-to-peak, positive going, at terminals 29 and 4 to operate signal-powered digital tachometers SPD-100.

Output Ripple and Noise: 0.1% of full-scale maximum over 10% to 100% of full-scale.

Verifying Setpoints: *No input signal required.* Jumpering specific terminals overrides the 0–1 mA auxiliary meter output at terminals 7 and 8; instead, the actual setpoint value is output and viewed using an external meter at terminal 7 and 8.

Response Time: 150 milliseconds, 10% to 90% rise, is standard. Full-scale frequency ranges below 80 Hz are proportionally slower.

Linearity: 0.1% of full-scale (0.05%, typical), all outputs.

Output and Setpoint Stability: Less than 0.05% of full-scale change with a 10% change in supply voltage.

RELAYS

Logic: Field-programmable by switches for overspeed, underspeed, energize, de-energize, latch, auto-reset, and DPDT.*

Ratings: ***"A" series:*** *Contact rating: 6.0 A @ 28 Vdc or 115 Vac (resistive); 2.0 A @ 220 Vac. Maximum inductive load 75 Vdc, 1.0 A, into 500 mH, for up to 100,000 cycles; SPDT.**

"H" series: *Contact rating: 5 A (resistive) @ 24 Vdc; 1.0 A @ 120 Vac; 0.5 A @ 220 Vac; SPDT.**

**For DPDT, relays 1 & 3 and 2 & 4 work together as separate DPDT trips.*

Alarm Setpoints: Relay setpoints are easily adjustable using 25–turn cermet potentiometers. Potentiometer adjustments are accessible through holes in the cover plate.

ALARM DISABLE: Jumpering terminal 31 to terminal 7 disables all alarms, allowing for startup conditions and special functions.

ALARM RESET: Momentary jumpering of terminal 32 to terminal 7 resets all latched alarms. Permanent jumpering converts all latching alarms to auto-reset.

OPTIONS

ENCLOSURES: XP and NEMA rated enclosures are available.

OPEN PICKUP: Relay 1 switches in the event of an open or disconnected magnetic pickup. Relay 1 will still react when its setpoint is traversed. ***NOTE:*** *Not available with signal isolation transformer option.*

PNEUMATIC TRIP: Pulses relay 1 for 100 milliseconds; trips optional Dynalco SPV-200 Solenoid Pneumatic Valve on overspeed.

UNDERSPEED CLASS "C" LOGIC: Arms relay 2 as setpoint 2 is traversed on increasing speed. Pulses relay 2 as setpoint 2 is traversed on decreasing speed. Use for tripping the pneumatic SPV-200 on underspeed or for general underspeed electrical shutdown.

EXPANDED SCALE INPUT: Provides full meter output, full proportional output, and full setpoint range over a limited input range e.g. 0–1 mA and 4–20 mA over 800–1000 Hz input frequency.

ENVIRONMENTAL

TEMPERATURE RANGE: –40°F to +160°F (–40°C to +71°C) operating. –40°F to +180°F (–40°C to +82°C) storage.

Weight: 2.6 lbs (1.17 kg)

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