FEATURES

- Five modes of operation:
  1. DISABLE ALL – Disable All Signal Operation
  2. ISLAND ONLY – Disable All Signal Operation Except Island
  3. NORMAL – Normal Signal Operation
  4. TEST WITH GATES UP – Signals Flashing with Gates Raised
  5. TEST ALL – Signals Flashing with Gates Lowered
- Multi-break Force-Guided Switch Contacts Route Inputs to (XR Relay Output)
- Flasher Output for Driving LED or Incandescent Warning Indicator has 8 User Programmable Flash Patterns
- Audio Annunciator Sounds when Signals are Disabled
- Two Sequential and Separate Switch Position Settings Required to Disable Signals
- Recorder Outputs for NORMAL and TEST Modes
- Plug-in Connector for Wiring Inputs and Outputs
- Three-year Limited Warranty

BENEFITS

- Malfunctioning crossing signal can be disabled safely and easily by untrained railroad personnel
- ISLAND ONLY operation provides protection while train is in crossing (if island train detection is functioning properly)
- TEST WITH GATES UP mode allows highway traffic movement through crossing while signal maintainer visually inspects flashing lamp units
- Critical inputs utilize multi-break force-guided switch contacts and supervisory circuits for determining the vital output to the XR relay or crossing control unit.
- Safeguard to prevent unintentional disabling of signals requires two separate in-sequence switch position settings to disable signals
- Keyswitch can prevent unauthorized disabling of signals
- Built-in warning flasher can power exterior indicator used for warning train crews that crossing signal is disabled
- Plug-in connector wiring requires no soldering, lugs or tools

Why Use a Signal Override System?

Improved Crossing Safety for the Railroad and the Public

Most rail/highway signal malfunctions are “False Activations” with lights flashing and gates lowered and no trains approaching or occupying the crossing. This usually results in disrupted highway traffic and calls from citizens and local law enforcement agencies notifying the railroad of the problem.

When the railroad’s signal maintainer is not readily available, a method is needed for railroad personnel not trained in signal maintenance to safely disable the crossing signals until the maintainer can arrive to make necessary repairs or corrections.

The SOS-5 Signal Override System provides a simple and easy way to safely disable crossing signals in 3 simple steps:

1. **DANGER!! Issue a crossing protection order before disabling signal operation according to your railroad’s rules/instructions.**
2. Rotate the selector switch to the ISLAND ONLY position then momentarily turn the keyswitch clockwise and release. If the malfunctioning signals recover (turn OFF) then leave the switch in the ISLAND ONLY position/mode.
3. If step 2 (above) does not cause the signals to recover, then select the DISABLE ALL position/mode and again momentarily turn the keyswitch clockwise and release. This should result in all signal operation being disabled, the Audible Annunciator sounding and the flasher warning indicator (if installed) continuously flashing or on.

Improved Convenience for the Railroad Signal Maintainer and the Motoring Public

Each 30-day signal inspection requires that every flashing lamp unit be visually inspected for proper operation and visibility. This inspection may take several minutes as it requires the maintainer to move across the tracks to view flashing lamps facing the opposite direction. Of course during this time the gates are lowered and highway traffic is stopped.

To avoid delaying highway traffic during testing, the SOS-5 Signal Override System allows the signal maintainer to first activate the flashers and lower the gates by placing the selector switch to the TEST ALL position. Once verification of proper gate operation has been made, the maintainer can then move the selector switch to the TEST WITH GATES UP position which will leave the flashers on but raise the gates. The maintainer can then proceed to visually inspect all flashing lamp units. For safety reasons the SOS-5 Signal Override System will allow the gates to lower if an approaching train is detected by the train detection system.

Genesis SOS-5

signal override system

SPECIFICATIONS

OUTPUTS (maximum)

XR+/XR–	0.4	Amp
FLASHER+	2.0	Amp
GR+	1.5	Amp
RCDR NORM+ and RCDR TEST+	0.02	Amp

INPUTS

B/N, GCP/MS±, ISLAND±	(maximum) 20.0	VDC
B/N (minimum)	(minimum) 10.5	VDC
GCP/MS±, ISLAND± (minimum)	(minimum) 8.0	VDC

ENVIRONMENT

Operating Temperature	-40 (-40) to 140 (60)	°F (°C)
Humidity (non-condensing)	95%	Relative

MEASUREMENTS (see reference drawings for details)

Height (mtg tabs included)	8.55 (21.7)	in (cm)
Width	4.725 (12.0)	in (cm)
Depth (including connector)	4.2 (10.6)	in (cm)
Mtg Depth Required for Wire Clearances	5.7 (14.5)	in (cm)
Weight	2.5 (1.13)	lbs (kg)
Mounting Slot Centers - Horizontal	3.72 (9.5)	in (cm)
Mounting Slot Centers - Vertical	8.09 (20.55)	in (cm)
Mounting Screws (4 req'd)	#6 or #8 (M3.5 or M4)	

CONNECTOR WIRING

Wire Size - Range	12 - 28	AWG
Recommended Wire Size	16	AWG

CONNECTOR WIRING PINOUTS

PIN	NAME	FUNCTION
1	GCP/MS+	GCP/MS POSITIVE INPUT
2	GCP/MS–	GCP/MS NEGATIVE INPUT
3	ISLAND+	ISLAND POSITIVE INPUT
4	ISLAND–	ISLAND NEGATIVE INPUT
5	FLASHER+	FLASHER POSITIVE OUTPUT
6	RCDR NORM+	NORMAL OUT TO EVENT RECORDER
7	BATT– (N)	BATTERY NEGATIVE INPUT
8	BATT+ (B)	BATTERY POSITIVE INPUT
9	GPR IN	GATE REPEATER RELAY INPUT
10	GPR OUT	GATE REPEATER RELAY OUTPUT
11	RCDR TEST+	TEST OUT TO EVENT RECORDER
12	XR–	XR NEGATIVE OUTPUT
13	XR+	XR POSITIVE OUTPUT

INSTALLATION

The Genesis SOS-5 Signal Override System should be mounted in a dry, weather protected enclosure, with ambient temperature less than 120˚F (49˚C).

Recommended hookup wire is stranded AWG #16. The plug-in connector requires stripping the wire, opening the spring-cage wire retaining mechanism, inserting the wire into the proper connector position, then releasing the spring-cage retaining mechanism. No lugs, crimping or soldering is required. The connector will accommodate one wire only for each connector position.

DO NOT wire the plug-in connector with power applied or with it plugged in to the SOS-5 Signal Override System. An error in wiring or an inadvertent short to an adjacent pin may damage the SOS-5 or other connected equipment. Before plugging-in the connector, ensure that all wiring is secure and correct, including polarities. Damage caused by incorrect hookup is not covered by the warranty.

The position of the Mode Selector Switch determines how input energy (voltage) on the GCP/MS±, Island± or B and N inputs is routed to the XR± outputs. Each pair of these inputs are electrically isolated from each of the other pairs.

The GPR IN and GPR OUT connections should be wired in series with the gate repeater relay (GPR) circuit.

One of eight different flasher output patterns can be selected and programmed into the SOS-5 Signal Override System.

Please refer to the SOS-5 Signal Override System User Guide for complete information for installing and programming the Genesis SOS-5 Signal Override System.

OPERATION

Operation of the SOS-5 Signal Override System to disable signals consists of moving the 5-position selector switch to either the ISLAND ONLY or DISABLE ALL position followed by briefly rotating the momentary DISABLE keyswitch clockwise. The FLASHER+ output will then be immediately activated, the Audio Annunciator will sound and the red SIGNALS DISABLED LED will illuminate indicating the signals are disabled. The Audible Annunciator can be silenced by rotating the DISABLE keyswitch a second time, or will automatically silence after 60 seconds, but will sound for 1.5 seconds every 2 minutes as long as the signals are disabled. If the 5-position selector switch is moved to ISLAND ONLY or DISABLE ALL positions without actuating the keyswitch, the gates will lower and signals will flash.

DANGER!! Issue a crossing protection order before disabling signal operation according to your railroad's rules/instructions.

Operation in the NORMAL, TEST WITH GATES UP and TEST ALL modes simply requires moving the 5-position selector switch to the desired position.

Please refer to the SOS-5 Signal Override System User Guide for complete information on how each of the five switch positions function as well as other operational details.

ORDERING INFORMATION

To order the Genesis SOS-5 Signal Override System, specify: **SOS-5 Signal Override System**, part number **16059-000.** (Female mating connector included).

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