

## Comparison of ASG's SC-200 to SC-100 LVDT Signal Conditioner Modules

Descriptively, there are several significant improvements of the SC-100 module over its predecessor:

1. The SC-200 now uses plug-in screw terminals, so the I/O connections can be hooked up without being attached to the module.
2. The SC-200 has a fully differential input, which common modes out most ground-loop developed noise signals. The SC-100 has a single-ended input, which is easier to work with, but can be more susceptible to certain types of extraneous noise, usually from shield grounding issues.
3. The SC-200 offers two user-selectable shield grounding points versus the SC-100's single user-selectable shield grounding point.
4. SC-200 incorporates a user-invoked lockout cybersecurity feature to prevent tampering and to notify a user of a tamper attempt.
5. The SC-200 has improved filtering of the sine wave excitation signal to produce less harmonic distortion than the SC-100's excitation, which reduces capacitively coupled noise issues arising from long cables.
6. An SC-200 permits changing the module's excitation frequency and the analog output via ASCII commands over the RS-485 bus, which obviates any need to open the module's case for this purpose and offers a user complete remote setup for operation with an LVDT. For half-bridge sensors, 2 internal jumpers must be set by the user. An SC-100 does not offer this completely remote setup feature. Note that for either unit, the case must be opened to set the specific digital address
7. The SC-200 has more system diagnostic capabilities than the SC-100, which can assist in fault detection for high reliability applications. At least 16 fault conditions can be detected by the SC-200's diagnostics, including shorted, disconnected, or open primary; shorted, grounded, disconnected, or open secondaries; analog voltage output shorts or current loop opens; and the most common hook-up errors made during initial setup and installation.
8. SC-200 has a real-time recalibration feature to tweak the analog output after the mechanical system has warmed up. Recalibration can be performed either over the module's RS-485 bus or from its front panel.
9. The SC-200 has an SC-100 emulation mode to make it operate essentially the same as an SC-100 for retrofit requirements, although operation as an SC-200 is the preferred mode.

## New Features and Diagnostics Comparisons

<b>Features</b>	<b>SC-200</b>	<b>SC-100</b>	<b>Competitor</b>
Differential Input Connection of Sensor's Output	X		X
Two User-Selectable Shield Grounds	X		
Remote Setup of Module via RS-485 bus	X		
Remote Calibration via RS-485 bus	X	X	X
Module Hot Swappable	X	X	X
SC-100 Emulation Mode for Backward Compatibility	X		
In-Process Recalibration for Zero and/or Full Scale	X	X	
Error Output Polarity Configurability as N.O. or N.C.	X	X	
<b>Diagnostics</b>			
Primary Connection Open	X	X	X
Primary Connection Shorted across leads	X		
Primary Connection Shorted to ground	X	X	
Secondary Connection Open	X	X	X
Secondary Connection Shorted across Leads	X		
Secondary Connection Shorted to ground	X	X	
Voltage Output Short	X		
Current Loop Output Open	X		
Sensor Wiring Errors	X		
Shorted Master / Slave Bus	X	X	
Module Wiring Errors	X		
<b>Cyber Security</b>			
Anti-Tampering Lockout	X		
Tampering Warning Flag Output	X		