

DIGITAL INDUSTRIES SOFTWARE

# Simcenter SCADAS Mobile Sixteen channel analog output module

Simcenter/SCM-A016/2406/20240625

## Product Information Sheet

### Summary

The A016 is a 16 channel analog output and normalized analog copies of any input signal that is captured by the Simcenter SCADAS Mobile front-end. The A016 module occupies one Simcenter SCADAS Mobile slot and can accurately output any conditioned input signal independent of conditioner type.

The A016 selects the appropriate data streams from the digital bus traffic on the Simcenter SCADAS Mobile backplane, corresponding to the input channels that are selected by the user for monitoring. These data streams are sent to a maximum of 16 digital to analog converters that will reconstruct the analog signals as if they were acquired by the ADCs in the corresponding input channels.

## BENEFITS

- Flexible reproduction of analog input signals for test rig signal conditioning or monitoring applications
- Possibility to extend analog output capabilities by adding AO16 modules in main and secondary frames

## FEATURES

- 24 bit D/A converters ensure accurate reproduction
- Normalized signal output level of  $\pm 10$  V ensures high SNR
- Accurate reproduction up to 5kHz bandwidth with on-board calibration for gain and offset error

### Function

Analog monitoring output for up to 16 conditioned input channels

### Installation

The AO16 can be installed in both main and secondary frames. When located in a main frame, the AO16 will provide analog monitoring output from any input channel in the main or secondary frame. Installation of the AO16 in a secondary frame allows monitoring output from all input

channels within that secondary frame.

### Connector

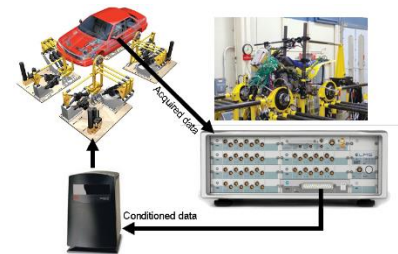
37 pole female SUB-D

### Output voltage

$\pm 10$  V, normalized against the corresponding input range

### Calibration

Gain & offset calibration factors are stored in non-volatile RAM and applied online



Product Information Sheet

General information		AO16 specifications
Product name	SCM-AO16	
Description	Simcenter SCADAS Mobile sixteen (16) channel analog output module	
Input ranges differential input	-	
Input ranges charge input	-	
Input ranges V/ICP input	-	
Digital interface	-	
Outputs	Analog monitoring output for up to 16 conditioned input channels. $\pm 10$ V, normalized against the corresponding input range	
Transducer connector	37 pole female SUB-D output connector	
D/A Converter output		
Max. sampling rate	51.2 kHz (*)	
Max. bandwidth (filter off, -3 dB)	5 kHz ( $\pm 0.1$ dB)	
DAC Architecture	24bit Sigma Delta DAC	
Coupling	Floating DC (common ground for all channels)	
	(*) during AO16 operation: <ul style="list-style-type: none"> <li>all analog input channels are set to 51.2Khz sample rate</li> <li>CAN, tacho, GPS, T8, T8a, WFI, WFI2, WFI2-KR, CIM2, SCS-V12, SCS-B12 signals are not supported (modules can be present, but inputs should not be activated)</li> <li>In multi-frame configurations, AO16 in main frame can output channels of modules in any frame (incl. secondary frames); AO16 modules in a secondary frame can only output channels of modules in that same (secondary) frame.</li> </ul> Standalone operation with AO16 is not supported.	
Power		
Power consumption/power budget	During normal operation: maximum 5 W. When no input channels are selected for reproduction through AO16, the module will use less than 1 W	
Output impedance		
	Minimum load impedance: $600 \Omega // 1 \text{ nF}$ . AO16 is short-circuit protected Output impedance $50 \Omega$	
Signal to noise ratio (SNR)		
	>97 dB, referred to the normalized output range of $\pm 10$ V	
Total Harmonic Distortion (THD)		

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	Better than -90 dB@3 dB below full scale
<b>Latency</b>	
	Absolute latency (delay between analog input and analog output) is less than 10 ms.
<b>Residual Offset</b>	
	Better than +/- 0.1% between -20°C and 55 °C
<b>Amplitude accuracy</b>	
	At 1 kHz better than ±0.2 % between -20°C and 55 °C
<b>Protection</b>	
Isolation	All output channels have a common ground, which is isolated from system ground, guaranteed up to 60 VDC or 42 Vrms
ESD protection	According to EN61000-4-2, level 2 and ISO10605
EMC protection	Comply with CE-EMC directive, when installed in a SCADAS Mobile frame
Error detection methods	Error detection. Overload checks are notified to the host and through the "Status" LED
Shock protection	MIL-STD-810G specified in MIL-STD-810G method 516.5, Shock Amplitude: 60 gpk.
Vibration protection	MIL-STD-810G method 514.5, procedure 1, Category 24: RMS 7.694 g
Ambient operating temperature range	-20 °C to +55 °C
Storage temperature range	-20 °C to +70 °C
<b>Housing</b>	
Dimensions	One Simcenter SCADAS slot
<b>Connector and pinning layout</b>	
	<p><b>Connector type:</b></p> <p>1x Sub-D connector, 37-pin. Delivered with a breakout box.</p>



### **Ordering Information**

Support of Simcenter SCADAS  
Frames and Modules may be  
restricted in specific Simcenter  
Testlab application workbooks.

Please check with your local  
representative for full details.

SCM-A016: Simcenter  
SCADAS Mobile 16-channel  
analog output module

### **Included accessories**

Including the connecting cable to  
the connector box, and the  
connector block