

SIRIUS®

 **DEWESoft®**

TECHNICAL REFERENCE MANUAL

SIRIUS® V25-1



5.7. General specification

The general specifications apply to all SIRIUS® measurement slices unless otherwise noted at the specific measurement slice.

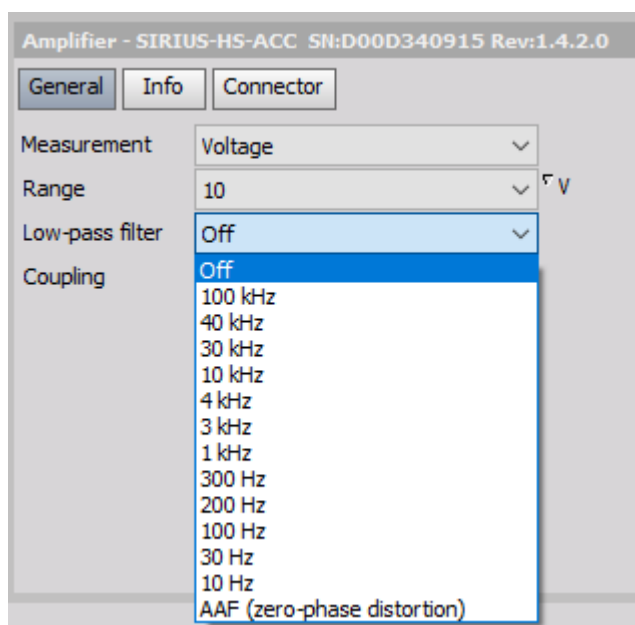
Power	
Power Supply	9 - 36 V DC
Power consumption	Typ. 15 - 35 W
Environmental	
Operating Temperature	-10 to 50 °C (40 °C for fanless series)
Storage Temperature	-40 to 85 °C
Humidity	5 to 95 % RH non condensing @ 60 °C
IP rating	IP20 (IP50 for fanless series)
Shock & Vibration	Vibration sweep sinus (EN 60068-2-6:2008) Vibration random (EN 60721-3-2: 1997 - Class 2M2) Shock (EN 60068-2-27:2009) MIL-STD-810D
Dimensions	266 mm x 149 mm x 55 mm 266 mm x 149 mm x 69 mm (extended slice)
Acquisition rate	
Time base accuracy	Typical 5 ppm, Max: 20 ppm
Synchronisation	
Delay between slices	50 nsec
Max. Sync-cable length	100 m (Master/Slave), 200 m (IRIG)
EtherCAT®: Max. cable length	100 m
Sync Input / Output	
Level (Input/Output)	TTL compatible
Max. Output Current	±24 mA (±50 mA for 1 sec)

5.7.2. HS general specifications

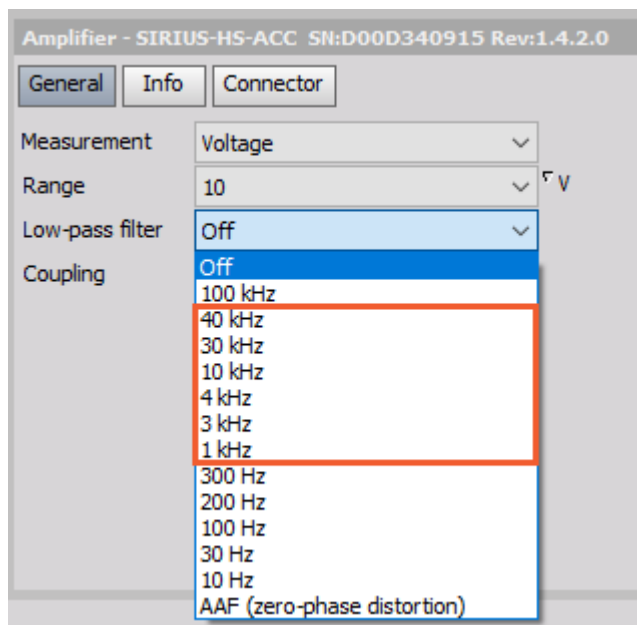
ADC	
Type	16-bit SAR
Sampling Rate	Simultaneous 1 MS/sec
Analog anti alias filter	Bypass or analog 100 kHz 5th order Bessel
Digital low pass filter	Software selectable
Digital filter Characteristic	Bypass, Butterworth or Bessel
Filter Order	2nd , 4th, 6th or 8th
Ratio Sample rate to Filter Freq.	From 2 to 100
Topology	Cascaded IIR Filter (up to 4 sections)

5.7.3. Low-pass filters on Sirius HS

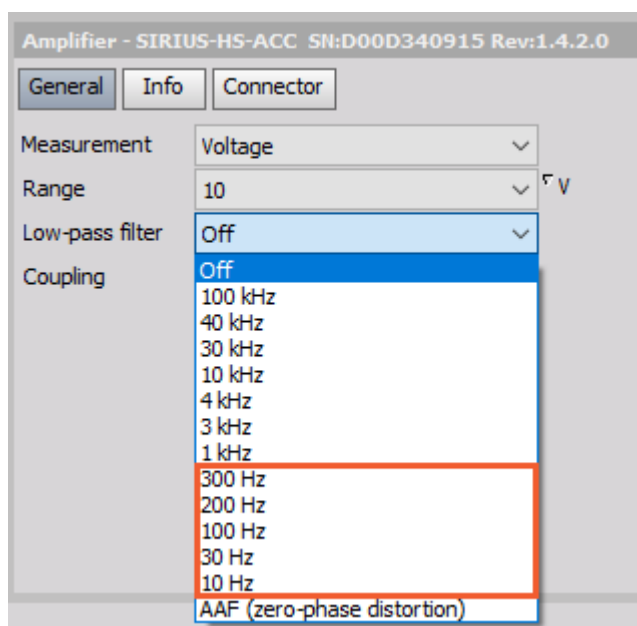
- The **100 kHz filter** is a hardware filter and is always applied except for when the "Off" option is selected in the dropdown menu.
This hardware filter is a Bessel 5th order filter.



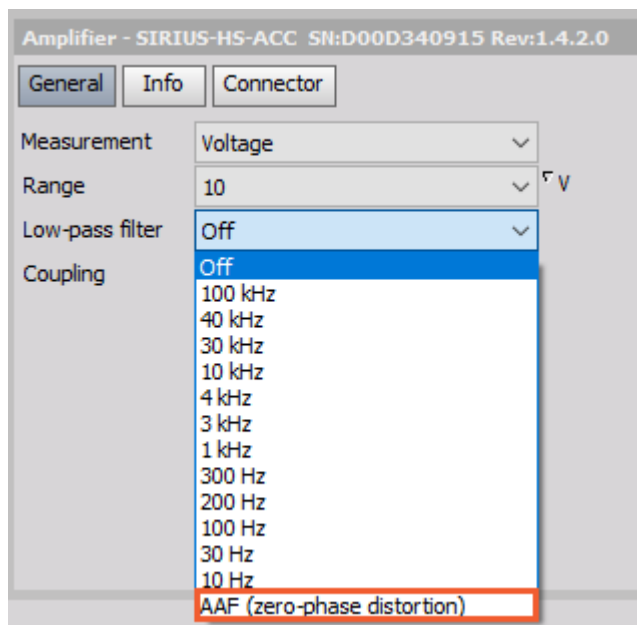
- IIR filters **between 40 and 1 kHz** are firmware filters, which means, that they are calculated on the FPGA.



- IIR filters with cut-off frequencies **lower than 1 kHz** are Software filters. If one of these filters is selected in the dropdown menu, then in addition to the software filter, with the selected cut-off frequency, a firmware filter with 1 kHz cut-off frequency is applied (the type and order of this filter is the same as the software one).



4. **AAF (zero-phase distortion)** has a cut-off frequency of 80 kHz, if the channel sample rate is equal or above 160 kHz. When a lower sample rate is selected, then the cut-off frequency of the AAF is equal to half the sampling rate of that channel.



5. **Special case:** If on a channel, that has a sample rate divider, a IIR filter is applied whose cut-off frequency is greater then 0.4 times the channels sampling rate, then in addition to the selected IIR filter a filter with a cut-off frequency at 0.4 times the sampling rate of the channel is also applied to the filter chain.

5.20. HS-ACC / HS-ACC+

The ACC modules are perfect for high-speed, high-sample-rate, wide-bandwidth sound and vibration IEPE channels.

5.20.1. HS-ACC: Specifications

Inputs				
Input types	Voltage,IEPE			
ADC Type	16-bit SAR			
Sampling Rate	Simultaneous 1 MS/s			
Filtering	See "HS general specifications"			
Analog bandwidth	500 kHz			
Voltage Mode				
Ranges	±10 Volt	±5 Volt	±1 Volt	±0.2 Volt
Input Accuracy	±0.05 % of reading			
Offset Accuracy	±2 mV	±1 mV	±0.2 mV	±0.1 mV
Typ. Noise floor @ 100 kS/s	-89 dB	-89 dB	-86 dB	-83 dB
Typ. CMR @ 50 Hz / 400 Hz / 1 kHz	120 / 96 / 88 dB	126 / 100 / 92 dB	140 / 110 / 102 dB	140 / 118 / 110 dB
Gain Drift	Typical 10 ppm/K, max. 30 ppm/K			
Offset Drift	Typical 0.5 µV/K + 10 ppm of range/K, max 3 µV/K + 20 ppm of range/K			
Gain Linearity	<0.02 %			
Inter Channel Phase-mismatch	0.02° * fin [kHz] + 0.1°			
Channel Cross talk	-83 dB			
Input Coupling	DC or AC (1 Hz)			
Input Impedance	1 MΩ			
Overvoltage Protection	50 V continuous; 200 V peak (10 msec)			
IEPE mode				
Excitation	4 or 8 mA			
Compliance voltage	25 Volt			
Output Impedance	>100 kΩ			
Sensor detection	Shortcut: <4 Volt; Open: >19 Volt			
Counters (HS-ACC+ type only)				
Inputs	1 digital counter input 3 digital inputs Fully synchronised with analog data			
Counter Modes	counting, waveform timing, encoder, tacho, gear-tooth sensor			
General Counter Specifications	See "SIRIUS counter specification"			
Additional Specifications				
Input connector	BNC			
TEDS support	IEPE mode only			

5.20.2. HS-ACC



HS-ACC connector: pin-out (BNC)

5.20.2.1. HS-ACC: Voltage, IEPE

Voltage

IEPE

