### Setting up Accelerometers as Assets in SKF @ptitude Analyst

## Setting up accelerometers as assets in SKF @ptitude Analyst

You will need:

- SKF Microlog AX or GX
- Portable calibrator
- Pen and paper



#### How to set up the tests in SKF @ptitude Analyst

**ICP** and **Voltage** should be set up as measurements irrespective of having a handheld calibrator (ICP is a standard accelerometer point with ICP enabled).



Fig 2. Accelerometer points.

Fig 1. The necessities: SKF Microlog, pen and paper, and a portable calibrator.



In the **General** tab in the **Group Properties** window, enter the factory sensitivity in the **Description** field.

Settings       Velocimetr S/N 13207         Description:       105mV/in/sec or 4.1mV/mm/sec         Type:       [Machine]         Image: Im	roup Properties General   Tags   Filter Keys	   Messages   Notes   Images
Image: Segment and asset tracking         Segment name:         Asset name:         Miscellaneous         Priority:	Settings Name: Description:	Velocimetr S/N 13207 105mV/in/sec or 4.1mV/mm/sec [Machine]
Miscellaneous Priority: No priority>	Enable data collection     Segment and asset trackin     Segment name:     Asset name:	9
	Miscellaneous Priority:	<no priority=""></no>

POINT Properties			
Messages   No General Setup	tes   Frequencies   I   Compliance   Filter K	mages   Baseline eys   Setup Log	Band Envelope Overall Speed Alarm
<u>F</u> ull scale: Input mV/E <u>U</u> :	5 g	Detection:	RMS
Freq. type:	Fixed span 💌	Lines:	400
Sa <u>v</u> e data:	FFT 💌	Window:	Hanning 🔽
Start freq.:	0 kCPM	Auto <u>c</u> apture:	Always 🗸
End freq.:	120 kCPM	<u>S</u> peed:	1800 RPM
Low freg. cutoff:	1200 CPM	Averages:	1
Pulses <u>/</u> Rev:	1	Averaging:	Average 💌
Linear fact <u>o</u> r:	0	Linear speed units:	
- Speed tag referer	nce		
POINT:	None		Select
<u>R</u> atio:	1		
		ОК	Cancel Help

Fig 4. POINT Properties window – Setup tab.

Fig 3. Group Properties window – General tab.

In the **Setup** tab in the **POINT Properties** window, the **Input mV/EU** field should remain at **100** irrespective of the sensitivity of the accelerometer.

**Note:** The **Detection** setting will depend on what is set on the calibrator.

Note that voltage is a manual data entry.

DAD/POINT Type Selection × DAD type: Microlog Analyzer ¥ Application: General Y Sensor type: DC ¥ <u>U</u>nits: Vdc × ΟK Cancel Help

Fig 5. DAD/POINT Type Selection window.

General Setup	Compliance	Filter Keys	Setup Log	Overall	Messages	Notes   Image
<u>F</u> ull scale:	30	V	Zero of	fset:	0	mV
Input mV/E <u>U</u> :	1000	-	-		3	

Fig 6. POINT Properties window – Setup tab.

#### Set the overall alarm as an **out of window** alarm.

Diaital Output	L Massana L Alar	n Graum
Overall Band	Speed Alarm Envelope MCD	Inspection
	·	
Overall alarms:	Bias Check	~
Properties		
<u>N</u> ame:	Bias Check	
<u>○ L</u> evel		
O In window		
Settings	10	
	Danger	rhigh
Alert <u>h</u> igh	Cles	ar
Aler <u>t</u> low	0	
🗹 Danger low	8 Dange	r low
	Add	<u>R</u> emove

Fig 7. Alarm Settings window – Overall tab.

If you have a handheld calibrator, calibration check can be set up as a third measurement. Note that calibration check is also a manual data entry.

DAD/POINT Type Selection						
<u>D</u> AD type:	Microlog Analyzer 🔽 🗸					
Application:	General 💌					
<u>S</u> ensor type:	Manual					
<u>U</u> nits:	Items 💌					
	Cancel Help					

Fig 8. DAD/POINT Type Selection window.

#### Full scale is dependent on the factory sensitivity.

General Setup	Compliance	Filter Keys	Setup Log	Overall   Messag	ges   Notes   Image
<u>F</u> ull scale:	120	mV/g	$\sum$		
L'air souic.	120	invrg			



Set the overall alarm as an **out of window** alarm with the alert levels set according to the calibration data sheet for the accelerometer, usually as a =/- % of set sensitivity:

Alarm Settings		
Digital Output Overall Band	Messages   Speed Alarm   Envelope	Alarm Group
Oyerall alarms: Properties Name: Level In window O Dut of window	Accel Cal sensitivity	
Settings □ Danger high ☑ Alert <u>h</u> igh	0	Alert high
Alert low	<b>90</b> 0	Alert low
		Add <u>R</u> emove
		Close Help

Fig 10. Alarm Settings window – Overall tab.

### Route loaded onto instrument

Note: The ICP icon in the toolbar indicates that the ICP supply is on.



Fig 11. ICP icon indicating that the ICP supply is on.

From the ICP point, press the **shift** (†) and **2** keys. Note down the bios voltage reading when displayed and then press **OK** to return to the route screen.

**Note:** If you have a triaxial sensor connected, the bios voltage for channels X, Y and Z will be displayed.

Microlog		<u>4</u> 14:51
Bias check results		
Input	Bias Voltage	
	10.85 V	
		ЭК

Fig 12. Bios check results.

### Applicable to calibration check only

If you have a handheld portable calibrator, you can now test the sensitivity of the accelerometer and cable.



Fig 13. Portable calibrator.

Attach the accelerometer to the portable calibrator and switch it on, and then start the route measurement.



Fig 14. Accelerometer attached to the portable calibrator.

Taken 0 of 50	🔄 🛉 14:50
Accelerometer Checks	
Accelerometer Checks	
🖹 🖻 👢 CMSS 2111	
🖻 🖑 Accel S/N 68661	
Voltage	
Calibration Che	
🕀 🍻 Accel S/N 68183	
🕀 🧬 Accel S/N P71187	
🗄 🧬 Accel S/N P12025	
🗉 📜 Triax	
⊞- <b>II.</b> PCB 621B40	
■	
Help Nonroute Notes Config	Esc



### Assessing the accelerometer's actual sensitivity

Once the data has been collected, use the **Review** function to display the spectrum and use the **7** key to locate the peak.

The amplitude displayed shows the sensitivity of the accelerometer. In this case, it is showing 0.906, so the sensitivity is 90.6mV/g. Note this and return to the route menu.



Fig 16. Review Data screen.

### Manual data entry of bios voltage

Select the voltage reading to display the manual data entry screen, and then press the **Manual** function key. Use the keypad to enter the value you noted down previously and then press **Enter**.

Collecting data						<u></u> 4 16:13
***ALARM**		1		Accel S/N 6 Voltage Bias check Ch1 18/03/201: Last: 10.8V	8661 1 16:09:35	
<b>-0.007</b> Last: 10.8V Change: -100	V <sup>0.1%</sup>	-	-100%			
Accel S/N 686 Alarm: Ov2	561, Voltage, E	Bias check, Ch	1			
Help	Manual	Retake	1	View	Notes	Esc



The alarm will clear and you can press the **Enter** button again to return to the route menu.



Fig 18. Collecting data screen – without alarm.

## Manual data entry of calibration sensitivity

Select the calibration check reading to display the manual data entry screen and then press the **Manual** function key.

Use the keypad to enter the value you noted down previously and then press **Enter**.



Fig 19. Collecting data screen – with alarm.

The alarm will clear and you can press the **Enter** button again to return to the route menu.

Collecting data					<u></u> <b>6</b> :49
90.6 m Last: 0.957m Change: 935 Accel S/N 686 Done	NV/g <sup>NV</sup> g 8.1%	100 Torong and the second seco	Accel S/N 6 Calibration Accelerome Ch1 Last: 0.957	58661 Check ater sensitivity input 7mV/g sitivity input, Ch	11
Help	Edit	Petake	View	Notes	Ecc

Fig 20. Collecting data screen – without alarm.

# View the trend for the bias voltage or sensitivity

When finished, upload the data into SKF @ptitude Analyst and view the trend for the bias voltage or sensitivity.

SKE optitude Analyst - ADMIN -	Hierarchy (Expires on 01/01/2)	012)					- 5 8
Eile Edit Wew Insert Fransfer	Guitomize Window Help						
* Illerarchy		.68					
(1)	× ×	3 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
Trend - Accel S/N P71187 \ Vol	tage			Trend			- C X
Accel S/N P71187 \ Voltage, Amp. 1	0.85. Date/Time: 18/03/2011 16 :	52 30	Accel S/h	P71187 \ Voltage, Channel X			
20							
18							
16							
> 12							
10		na anna an			1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		
8							
18/02/2011	22/02/2011	26/02/2011	02/03/2011 M	06/03/2011 easurement Time Stamp	10/03/2011	14/03/2011	19/03/2011
Into Summary Titend Overal Alam	Notes Speed Alam						
Accel S/N P71187 \ Voltage 18/03/2	011 16:52:30 10:85 V						

Fig 21. SKF @ptitude Analyst – Hierarchy screen.

Please contact:

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