

Control Room Electronics System 2000

Type 9887A...

Digital Electronics for RoaDyn® S6xy in Test Stand Mode

Advanced control room electronics designed to fully meet customer requirements for non-spinning 6-component RoaDyn wheel force sensors. The control room electronics System 2000 unit is designed specifically for the needs of vehicle test stands.

- Automatic identification of measuring wheel components
- Separate calibration of load cells and fine tuning of individual measurements
- High sampling rate (5 kHz) and resolution (16 bit)
- Analog outputs with minimal signal delay (< 1 msec)
- Clear, intuitive menus
- Versions with different digital interfaces for test stand electronics available

Description

The control room electronics System 2000 unit acquires the analog output signals of the load cells amplified in the hub electronics Type 5243A... . The signals are digitized and encoded on the wheel force sensor, and passed on via the cable Type 1700A88xx to the control room electronics Type 9887A... . The acquired individual signals are decoded, transformed online into a coordinate system fixed relative to the wheel, and converted into the moments acting on the wheel. The system is operated by means of a built-in touch screen. This is used to set the zeros of individual channels, mounting position of the sensor, lever arm compensation and scaling of the analog outputs. For the channel offsets three storage locations are available to record the zeros in different operating states. Diagnostic tools can also be activated.

To minimize the delay analog signals are output. A parallel interface (EPP) is available for data management. Special versions for digital connection to test stand electronics (IST & MTS) are available.

The RoaDyn S6xy wheel force sensors, which use individual load cells Type 9190A46, are calibrated in the factory and output temperature-compensated, amplified measurement signals in the three spatial directions. The identification, calibration and zero data of the individual forces is stored. When the electronics unit is activated the components automatically identify themselves and allow systematic computation based on the available individual values.

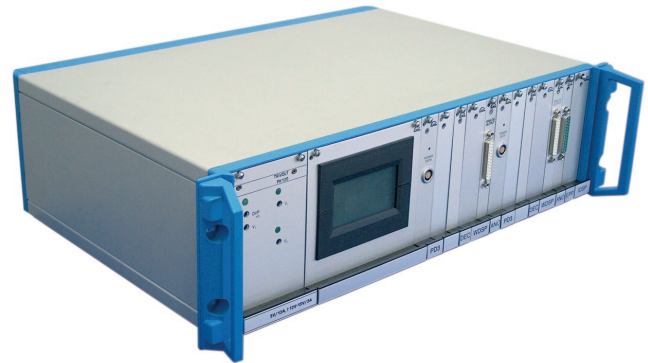


Fig. 1: Digital control room electronics, Type 9887A...

The fact that the measured individual signals are known allows rapid troubleshooting in the event of malfunctions. Individual cells can be replaced without impairing sensor operation. 12-channel Type 5243A12 and 18-channel Type 5243A18 versions of the hub electronics are available. The incoming signals are filtered and, after being digitized, sampled at 5 kHz and a resolution of 16 bits. The signal delay arising between the measuring time and signal output is less than 1 ms.

Application

The Control Room Electronics System 2000 unit has been developed for transmitting and processing the force signals from the RoaDyn S625, S635 and S650 measuring wheel systems. Its 19" case accommodates plug-in cards for one or two wheel sensors.

Technical Data

Hub Electronics, Type 5243A...

Weight	kg	0,34
Temperature range	°C	5 ... 50
Number of channels		18 and 24
A/D conversion		
Resolution	bits	16
Sampling rate	Hz	5 000
Anti-aliasing filter		
Butterworth		6 pole
Cut-off frequency -3 dB	Hz	1 500

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Control Room Electronics, Type 9887A...

19" case, 84U high, 3U deep		
Dimensions without handles (WxHxD) mm	450x140x315	
Power supply		
Voltage	V	115/230
Frequency	Hz	47 ... 63
Power consumption with 2 wheel sensors	W	64
Temperature range	°C	5 ... 50

Analog Outputs

Channels/wheel	8	
Output sensitivity	selectable	
Output voltage range	V DC	±10
Noise voltage (rms)	mV	<3 (0 ... 300 Hz)
Resolution	bits	14
Delay	ms	<1
Connector for each wheel	D-Sub female 25 way	

Digital Outputs (Special Design Depending on Type of Test Stand)

Channels/wheel		
with 2 sensors	16	
Output rate	Hz	approx. 5 000 (depending on test stand electronics)
Delay	ms	<1

Mounting

The control room electronics unit is installed in a suitable location in the test room. The cables from the hub electronics are plugged into the relevant PD3 card using a Lemo connector. Lengths of up to 50 m are readily available. The power supply is connected to the test laboratory line power. The control room electronics unit is connected to the test stand electronics via the analog data outputs (D-sub or BNC).

Accessories included

Control Room Electronics

- Basic case incl. AC power supply 115 ... 220 V, 9887A0 IDSP card, 1 pc. for 1 or 2 measuring sensor systems Type/Art.-No. 5295A
- Power cable, 1 pc. V104.0001
- PD3 card, 1 pc. per measuring sensor 5625A3...
- DEC card, 1 pc. per measuring sensor 5299A
- WDSP card, 1 pc. per measuring sensor 5295A
- ANO card, 1 pc. per measuring sensor 5297A
- EPP card, 1 pc. per measuring sensor 5623A1

Optional Accessories

Control Room Electronics

- Module programmer Type/Art.-No. 2883A
- DSP update tool 2885A
- Special wheel/hub electronics for combined use on test stand and vehicle 5443A...

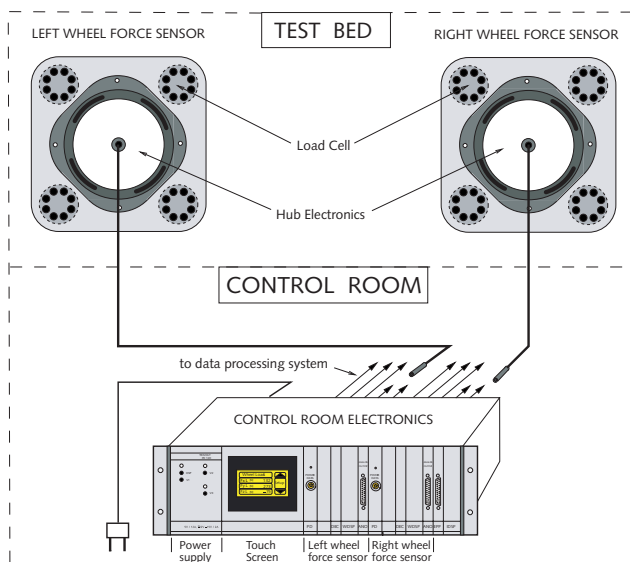


Fig. 2: Control room electronics System 2000

Ordering Key

Control Room Electronics

Number of wheel force sensors 1	1
Number of wheel force sensors 2	2

Type 9887A □



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