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RoaDyn™ Telemetry Transmitter

Type 9871A

Wireless Digital Telemetry Data Transmission Module

Wireless telemetry data transmission module to be used with Torque Wheel-Sensor RoaDyn P103 or RoaDyn P106. Measuring signals and system control information are digitally transmitted on eight channels between the sensor and the receiver-/control unit inside of the car.

- Digital data transfer without noise interference
- No cabling required, transmission range >5 m
- Operation of up to 4 separate transmission modules at one car with one receiver-/ control-unit
- Rechargeable battery with >12 hours capacity even at very low temperatures (i.e. for wintertests)
- Charging directly at the car without dismounting with integrated charger connection at the modules front side
- Easy and quick adaptation with four-screw fixation

Description

The RoaDyn Telemetry Transmitter transmits the signals from the Torque Wheel-Sensor RoaDyn P103 or RoaDyn P106 to the control unit, which is located inside of the vehicle. The transmission module can be adapted easily to the torque sensor with a four-screw fixation. The system carries a rechargeable lithium-ion battery (military standard) to allow even long time operation for more than 12 hours at very low temperatures. A battery charger with coupling at the front side of the module and cable connection is part of the standard specification, this allows recharging without prior dismounting directly at the vehicle when it is parked.
A DECT module transmits the signals on a bandwidth reaching from 1882 to 1897 MHz to the receiver-/control unit, which may serve up to four wireless transmission modules. Several systems may operate at the same time in the vicinity, e.g. several vehicles with 4 RoaDyn P1xy each. With the wide transmission range of more then 5m and the antenna completely integrated in the system the transmission is done without any cabling.

Applications

Applications are particularly in vehicle engineering or automotive research with emphasis in dynamic stability and traction control, anti-lock brake systems, investigations of fading effects, brake jitter, power measurements, determination of friction values, coast down and safety tests such as US procedure FMVSS 135 all exclusively in combination with RoaDyn P103 or RoaDyn P106 Torque Wheel-Sensors.

Technical Data

Temperature operating range			
Charge	T	°C	0 … 50
Discharge	T	°C	–25 … 55
Max. speed (≈250 km/h)	n	min^{-1}	2'200
Shock resistance		g	50
Mass of transmission module (incl. rechargeable lithium-ion battery)	m	kg	0,8
Dimensions			

Electrical Data

Power supply		rechargeable lithium-ion battery	
Nominal Voltage	U	V	3,6
Nominal Capacity		mAh	5'600
Typical Capacity		mAh	6'000
Max. continuous discharge current		A	1,5 … 2,0
Min. battery operating time (if fully charged)	t	h	12
Switch off voltage	U	V	≈2,5
Charge method (lithium-ion battery)			
Constant current/constant voltage			CCCV
Charging voltage (at lithium-ion battery interface)	U	V	4,1±0,04
Charging current	I	A	1,5 … 2,0
Charging duration	t	h	≈7
Memory effect			no
Charge retention (lithium-ion battery) after 1 month at room temperature	% of initial capacity		95

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Protection (lithium-ion battery)			
Against overcharge (4,1 V)			yes
Against overdischarge (2,5 V)			yes
Against overcurrent (charge, discharge, short circuit)			yes
Lifetime (lithium-ion battery)			
Min. operating time (in fully charged)	t	h	12
Lifetime (typical)	t	year	2 … 3
Number of charging cycles (typ.)	n		>500
Degree of protection	EN60529		IP65
Wireless signal transmission			DECT
Transmission frequency	f	MHz	1881,8 … 1897,3
Time Delay (if combined with control unit 9895)	t	ms	244
Conformity to the Directives	89/336/EWG		
EMC Emission	EN61000-6-4: 2001 (EN55011 Class A)		
EMC Immunity	EN61000-6-2: 2001		

Charging device (to charge one rechargeable lithium-ion battery) with:
- Cable (1 m) and connector to transmission module
- Multi country connector to 100 … 240 V (50/60 Hz)

Constant charging voltage	U	V	4,2±0,04
Charging current I	A	1,5	

Transmission Channels

Out	–>	1 x My, 1'000 samples/s
		4 x T, 10 samples/s
		1 x Battery voltage, 1 sample/s
		1 x Print temperature, 1 sample/s
In	<–	1 x Operate, before measuring
		1 x Range, before measuring

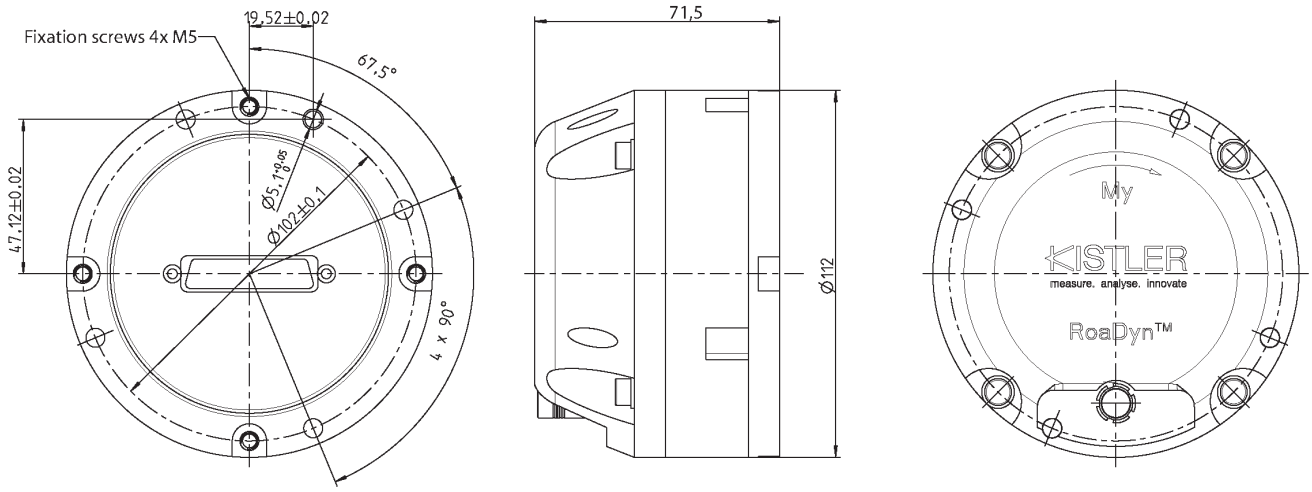

Fig. 1: Dimensions of Type 9871A

Fig. 2: Mounting Example Type 9294A and Type 9871A

Accessories Included — **Type**
- Charger for telemetry transmitter with connection cable to charger — 7.690.051
- Fixation screws — –

Optional Accessories
- no

Ordering Key
- RoaDyn Telemetry Transmitter — 9871A

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