

Telemetry Module

Type 9811A

for RoaDyn® P106

Wireless telemetry data transmission module to be used with torque wheel force transducer RoaDyn P106. Measuring signals and system control information of eight channels are digitally transmitted between the sensor and the on-board electronics inside of the car.

- Digital data transfer without noise interference
- Operation of up to 4 separate transmission modules at one car with one on-board electronics
- Rechargeable battery with >12 hours capacity even at very low temperatures (i.e. for winter tests)
- 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 module transmits the signals from the torque wheel force transducer RoaDyn P106 to the on-board electronics which is located inside of the vehicle. The transmission module can be adapted easily to the torque wheel force transducer 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 sending module on 2,4 GHz ISM-band transmits the signals to the on-board electronics, 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 P106 each.

Application

Applications are vehicle engineering based 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 procedure FMVSS 135.



Technical Data

| | | | |
|---|---|-------------------|------------|
| Operating temperature range | | | |
| Charge | T | °C | 0 ... 50 |
| Discharge | T | °C | -30 ... 60 |
| Max. speed | n | min ⁻¹ | 3 000 |
| Shock resistance | | g | 50 |
| Mass of transmission module (incl. rechargeable lithium-ion battery) | m | kg | 0,8 |
| Dimensions | | | |
| Diameter | | mm | 112 |
| Height of housing | h | mm | 55,6 |
| Height of antenna | h | mm | 27,4 |

Electrical Data

| | | | |
|--|---|-----|-------------|
| Power supply | | | |
| Rechargeable battery | | | lithium-ion |
| 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 | ≈2,7 |
| Charge method (lithium-ion battery) | | | |
| Constant current/constant voltage | | | CCCV |
| Charging voltage (at lithium-ion battery interface) | U | V | 4,1 ±0,04 |

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Technical Data (Continuation)

| | | | |
|---|---|-------|-------------|
| Charging current | I | A | 1,5 ... 2,0 |
| Charging duration | t | h | ≈7 |
| Memory effect | | | no |
| Charge retention (lithium-ion battery) (% of initial capacity) after 1 month at room temperature | | % | 95 |
| Protection (lithium-ion battery) | | | |
| Against overcharge (4,1 V) | | | yes |
| Against overdischarge (2,7 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 | years | 2 ... 3 |
| Number of charging cycles (typ.) | n | | >500 |
| Degree of protection (EN60529) | | | IP65 |
| Wireless signal transmission | | GHz | 2,4 |
| Time Delay (if combined with control unit Type 9813A...) | t | ms | 10 |

| | | | |
|--|----------------|----|----------------------|
| Conformity to the Directives | EN61326-1/2006 | | |
| Charging device (to charge one rechargeable lithium-ion battery) with: Cable (1 m) and connector to transmission module | | | |
| Multi country connector | V | Hz | 100 ... 240 50/60 |
| Constant charging voltage | U | V | 4,2 ±0,04 |
| Charging current | I | A | 1,5 |

Transmission Channels

| | |
|--------|-------------------------------|
| Out -> | 1 x M _y |
| | 4 x T |
| | 1 x Battery voltage |
| | 1 x Electronic temperature |
| In <- | 1 x Operate, before measuring |
| | 1 x Range, before measuring |

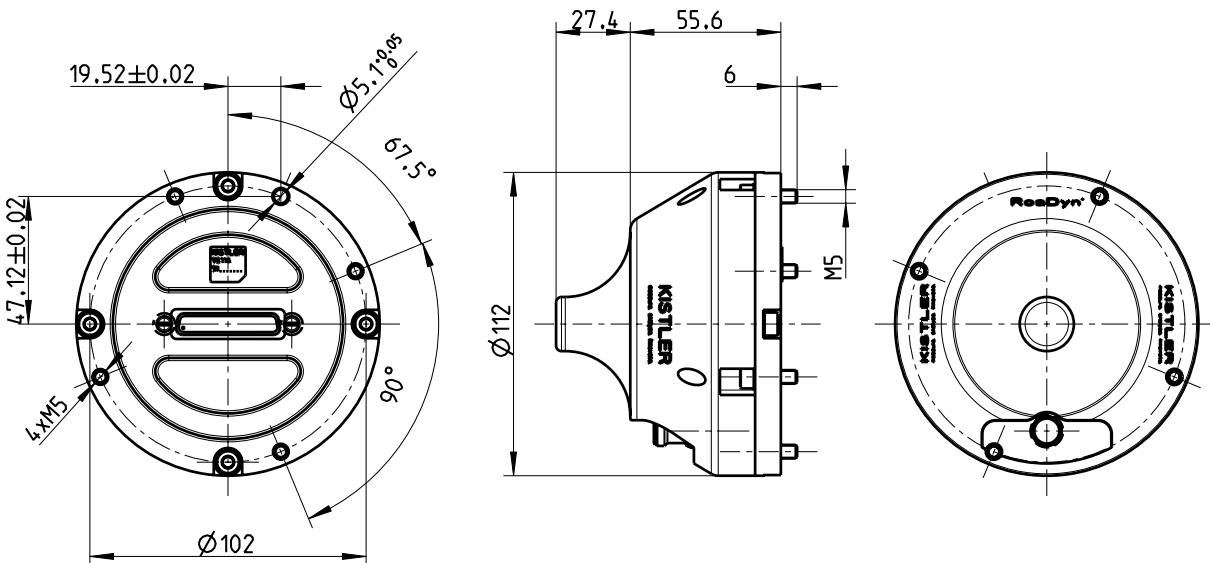


Fig. 1: Dimensions of Type 9811A

Accessories Included

- Charger for telemetry transmitter with connection cable to charger
- Power connector
- Cover connector

Type/Art No.

- 7.690.051
- 7.050.234
- 7.211.457

Ordering Code

- Telemetry Module for RoaDyn P106

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Optional Accessories

- None

9811A_000-756e-08.12

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