

Data Recorder

Type DTI327.04

In-Dummy Data Recording Module (Flex PLI)

The data recorder Type DTI327.04 is especially designed for recording measurement data in the Flex PLI ("Flexible Pedestrian Legform Impactor"). During the crash test digitized measurement values which are provided peripheral and sensor close by the so-called DiMod (digital sensor module) are recorded and stored in the central memory of the data recorder.

- In-dummy data recorder with 4 DTI ports for connection of 48 measurement channels
- Central memory with a capacity of more than 30 s measurement data
- On-board Lithium-ion accumulator with operating time of more than 120 s at full load with 48 connected sensors
- All connectors designed as wires (power supply, Ethernet, DTI ports, flashing LED)



Description

On the part of the DTI technology (Digital Transducer Interface), the data recorder is the core element for recording in-dummy measuring values. The special Flex PLI data recorder of Type DTI327.04 can detect and centrally store measurement data and signals of up to 48 sensors during the crash test. The measurement data are peripheral prepared and digitized by DiMods.

For this purpose the data recorder has 4 DTI wires. Up to 12 DiMod channels can be connected to each wire. For current supply on the connected DTI bus, each DTI port has its own short-circuit-proof control unit which sets the output voltage to 5,4 V, maximal 500 mA can be supplied. The total current for all 4 ports is limited to 1,3 A. In addition, each DTI port has its own RS485 driver and receiver for data transmission on the bus.

The Flex PLI data recorder of Type DTI327.04 has no connectors, all ports are designed as wires. Those wires carry a 100T-Base Ethernet connection and 4 DTI ports via a standard DTI cable, each with a diameter of 2,8 mm. The power supply of the data recorder is carried out with a supply voltage of 6 V, with maximum current consumption of 1,5 A at full sensor instrumentation.

Maximal 0,5 V remain as voltage reserve on the thin supply line. With the Ethernet communication wires, all setup and test procedures can be done before the firing and all stored data can be read-out after the test.

Technical Data

| | | |
|---------------------------|--------|-------------|
| DTI ports | | 4 |
| Measuring channels | | 48 |
| Recording time | s | 30 |
| Trigger | | T-zero |
| Synchronization | Hz | 1 000 |
| Communication | | |
| RS485 | Mbit/s | 6 |
| Ethernet | Mbit/s | 100 |
| Memory | MByte | 64 |
| Supply voltage | V | 5,5 |
| Weight | grams | 120 |
| Dimensions (LxWxH) | mm | 84x42x19 |
| Buffer memory accumulator | | |
| Type | | Lithium-ion |
| Supply voltage | V | 6,2 ... 8,4 |
| Buffer time | s | >120 |
| Charge | mAh | 130 |

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Description (Continuation)

Triggering is done when the Flex PLI test piece, which is linked via a free-moving tearaway connector and a docking cable with an interface box to the power supply, the T-zero output and the ethernet connection, is fired. After the firing the docking connection is without power and T-zero is started by a current measuring via a shunt both in the recorder and the interface box.

During free-flight phase the measuring electronics is supplied by an on-board miniature accumulator until the end of the measuring. The on-board Lithium accumulator with 130 mAh works in a voltage range of 6,2 ... 8,4 V. The accumulator interface is supplied with a linear series regulator for 5,5 V/1,5 A and a charge controller.

Application

The data recorders Type DTI327.04 are especially designed for recording measurement data in the Flex PLI ("Flexible Pedestrian Legform Impactor"). They record data during free-flight phase and the following impact at the vehicle. Signals of maximal 48 sensors for about 30 s can be recorded.

The data recorder is connected with a special docking cable which is supplied by a power supply before firing with a Flex PLI connection box Type DTI327.104. T-zero instant of time is defined by the firing of the Flex PLI test piece. The docking connector at the connection box is designed in a way that the forces are as small as possible when fired. For that purpose, locking and mass contact ring are removed.

By the firing, the docking connector dissolves and the supply of the measuring electronics is done by an on-board miniature accumulator. The accumulator is constructed for an operating time of 120 s at full load with 48 sensors. Assuming a realistic recording time of 10 s, about 12 tests can be done before the accumulator must be recharged. Recharging the empty battery takes about 4 hours time. The capacity of the battery is not detected in this special case but roughly determined by the software from the current voltage.

After the maximum recording time of 30 s, the recorder stops due to the memory size of 64 MB and is only activated again by plugging in the docking cable once more. The tearaway connector is supplied with Ethernet communication wires, so all setup and test procedures can be done before firing and the stored measuring data can be read-out after the test.

Included Accessories

- Connector box Flex PLI ConnBox
- Docking cable

Type No.

DTI327.104
DTI327K02

Optional Accessories

- None

Ordering Code

- Data Recorder Flex PLI

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