

UPS Power Supply

for DTI375 in-dummy data recorders

Type DTI375.01

The in-dummy UPS power supply of the Type series DTI375.01 is the power supply module of the DTI in-dummy data recorders with an input voltage range of 36 ... 60 V. The operating voltage is applied through the cable that connects the UPS with the Type DTI375.xy recorder. With the system cable, the DTI375 UPS & recorder assembly is connected to either a DTI interface (e.g. a ComBox) or a CrashLink® 2 interface.

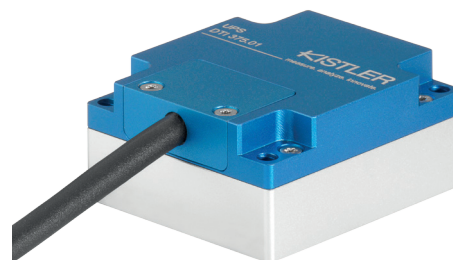
- Type DTI375.01 can be used together with recorders Types DTI375.12 or DTI375.08
- DC/DC converter for galvanic isolated input operating voltage
- Lithium battery for operation without external power supply for an operating time of at least 5 minutes
- Charging circuit for the battery and monitoring of the remaining capacity
- Replaceable battery module, with protection circuit for the Lithium batteries, allows easy exchange service in case of deterioration over lifetime

Description

Within the DTI technology (Digital Transducer Interface) based in-dummy data recording, the UPS power supply is required for supplying the data recorder (Type series DTI375.xy) and to guarantee data recording without interruption in case of failure of the mains supply. The UPS can supply a total of 30 W. The UPS has a single proprietary plug connector which allows it to be attached to either a Type DTI375.12 or a Type DTI375.08 data recorder. An isolated DC/DC converter is used to supply the data recorder with 5,7 V. The UPS is controlled and monitored through an I2C bus by the attached data recorder.

The UPS power supply is buffered with a Lithium-Polymer battery which is fully protected by hardware and continuously monitored. Charging of the accumulators is done voltage and current controlled. All components are monitored and controlled through the I2C bus by the attached data recorder. All relevant operating data like charge balance and accumulator capacity can be retrieved.

When the UPS is armed by the recorder it remains powered by the main power supply, unless the input voltage drops below 36 V. Once this occurs the UPS switches to the internal battery to generate the 5,7 V for the recorder. Switching back in normal operation with nominal 48 V supply can only be activated by the data recorder under control of the processor.



This prevents disturbances because of disturbed inputs during measuring.

Technical Data

UPS Power Supply Type DTI375.01

Supply voltage	V	36 ... 60
Power consumption (max.)	W	35
Buffer time	min	>5
Weight	grams	124
Dimensions (LxWxH)	mm	58x50x25
Operating temperature range	°C	5 ... 40
Storage temperature range		
Long term	°C	-20 ... 25
Short term (<1 week)	°C	-20 ... 50
Humidity, max (non-cond.)	%	80
Shock resistance, peak; half sine wave for 6 mx in all axes	g	100

Rechargeable battery

Type		Lithium-Polymer
Voltage	V	7,4
Capacity	mAh	550
Power (nom., max.)	W	60

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Application

The Type DTI375.01 UPS power supply devices are designed for direct assembling in "anthropomorphic test devices" (crash test dummies) and are installed into the dummies together with the data recorders as central and symmetrical as possible. It must be ensured by the installation of the UPS power supply and the data recorder in a suitable position within the dummy, that neither the mechanical nor the dynamic properties of the dummy are impaired. For this, a very high level of integration and a very small and lightweight design of the devices is desirable. It has been proved beneficial to build these two functional groups in separate cases, which can then be balanced in the dummy, e.g. at the spine.

In order to achieve a high grade of flexibility the DTI375.01 UPS is designed to be used with the DTI375.12 as well as with the DTI375.08 recorders. The flat and compact design allows its integration in the various dummy types, with the required recorder type. This reduces the effort for integration for different targets and allows interchanging UPS units between different applications.

The Type DTI375.01 UPS is designed in a very compact and flat shape, to fit into the different type of crash test dummies. The proprietary connector allows different shapes of cable routing to the attached recorder. E.g. for a WorldSID dummy integration, a straight and flat routing is required to place the DTI devices within the spine box plates, while other dummies require angulated routing. The respective connector which defines the routing is part of the DTI375.xy recorder which is more specifically designed for the needs of the various dummies. Thus the DTI375.01 UPS is universally applicable.

Included Accessories

- Type DTI375.01 UPS transportation cover

Type No.

on request

Optional Accessories

- None

Ordering Code

Type DTI375.01

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Fig. 1: Type DTI375.01 UPS with Type DTI375.12 recorder cabling

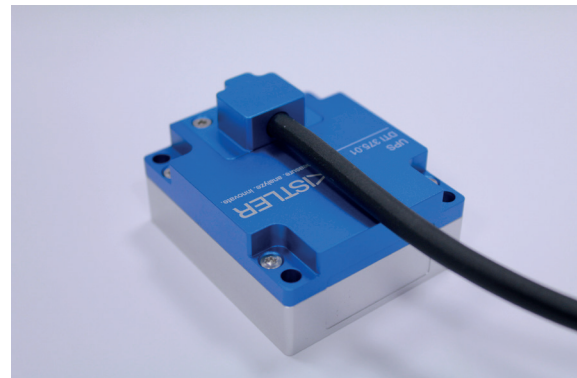


Fig. 2: Type DTI375.01 UPS with Type DTI375.08 recorder cabling