

# UPS Power Supply

## For DTI In-Dummy Data Recorders

Type DTI304.01,  
DTI304.02,  
DTI304V.02

The in-dummy UPS power supply of the Type series DTI304... is the power supply module of the DTI in-dummy data recorders with an input voltage range of 36 ... 70 V. In normal operation, the operating voltage is applied by a dummy system cable with plug connector that joins the cable outlets of data recorder and UPS power supply at an appropriate place. With this system cable the dummy is ultimately connected to a ComBox.

- Design as Types DTI304.01, DTI304.02 and DTI304V.02, depending on used data recorder
- DC/DC converter for potential-free input of operating voltage
- Lithium accumulator for operation without external power supply for an operating time of at least 10 minutes
- Charging circuit for the accumulator and monitoring of the remaining capacity



### Description

On the part of in-dummy measuring data recording, the UPS power supply of the DTI technology (Digital Transducer Interface), is a needed accessories for supplying the data recorder (series DTI, Type series DTI304...) in order to record without interruption in case of failure of the mains supply. Depending on the design of the UPS power supply, the total power is either 15 or 25 W. The power supply has two plug connectors. On the one hand a 5 pin connector for the dummy system cable and on the other hand an 8 pin connector that is used for connecting the data recorder. This one supplies the data recorder via DC/DC converter with 5,7 V which is connected through the digitizing modules (DiMod). In addition, the connector also has an I2C bus for operating the UPS functions by the data recorder.

In order to ensure uninterruptible measuring recording even when the main current supply fails, each data recorder can only be run with a UPS current supply. The UPS power supplies are buffered with Lithium-Polymer accumulators and the accumulator hardware is monitored concerning overvoltage and low voltage. Charging of the accumulators is done voltage limited and all components are monitored and controlled by the I2C bus of the data recorder's processor. Both charge balance and accumulator capacity can be retrieved.

Accumulator mode is only activated during the measuring by switching on a linear controller which supplies 5,7 V, activated by a FET controller, as soon as the input voltage of the UPS power supply input is below 36 V. 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 filthy inputs during measuring.

### Technical Data

Type DTI304...		.01	.02	V.02
Accumulator		Lithium-Polymer	Lithium-Polymer	Lithium-Polymer
Supply voltage	V	36 ... 70	36 ... 70	36 ... 70
Buffer time	min.	>10	>10	>10
Accumulator				
Voltage	V	7	7	7
Capacity	mAh	360	740	740
Power	W	15	30	25

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**Application**

The UPS power supply devices of the Type series DTI304... 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 that by the installation of the UPS power supply and of the data recorder in the dummy in a suitable place 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.

Especially for the UPS power supply devices Type DTI304.01 and Type DTI304.02 and their data recorders, an I-shaped design was chosen in order to realize a very compact setup together with the plug connectors and cable outlets. The housings have been primarily adapted to the plug connectors because of their large construction volume.

The structure of the UPS power supply Type DTI304V.02 and its data recorder was adjusted to suit the available space in the WorldSID dummy and offers a very compact design. Internal, the boards are built with so-called flexible connectors to which the connectors and cables can be connected directly without further wiring. This increases the operational safety.

The combination of connectors and cable outlets on the outside of the devices is designed in a way that assembling and exchanging can be done very easily. The assignment of the cables and connectors are functionally compatible with all recorder designs. The different designs of the UPS power supply devices can be installed in almost any dummy version.

**Included Accessories**

- Dummy system cable
- Cable to data recorder

**Type Nr.**

on request  
on request

**Optional Accessories**

- None

**Ordering Key**

Type DTI304.01	.01	Type DTI304 <input type="checkbox"/> 
Type DTI304.02	.02	
Type DTI304V.02	V.02	

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