

# ULTRA-FAST INTERRUPTER

SWITCHING DEVICE FOR  
LV 124 / LV 148 INTERRUPTIONS  
OF 75A AND 125A

DEVELOPED FOR THE ELECTRICAL TEST OF THE NORMS:

- LV 124, ISO 16750-2, VW 80000, BMW GS 95024-2-1, MBN LV 124-1 etc.
- LV 148, VDA 320, VW 82148, BMW GS 95026 etc.

The Ultra-fast Interrupter (UFI) was specially developed for the electrical tests described in the automotive norms LV 124 und LV 148, in order to allow short interruptions of the power supply of up to 60V with currents of up to 75A and 125A respectively.

## HIGHLIGHTS

- ✓ Wide range of application: LV124, LV 148, power output stage
- ✓ Use cases in laboratory tests and automated testing systems
- ✓ 5 independent switches: 4 x Signal Switches and 1 x Power Switch
- ✓ Extremely fast slope  $t_r, t_f < 100\text{ns}$  at 60V
- ✓ Adjustable PS input buffering
- ✓ Bus interruptions for BroadR-Reach\* and other standard fieldbuses
- ✓ Extensive overview of the device status via LEDs (in laboratory mode) and via a remote interface (in automation mode)
- ✓ Temperature-dependent fan control for noise reduction



## APPLICATION AREAS



Automotive Norm

The UFI enables very fast switching, as required for the E10, E13 and E14 tests of the LV 124 standard (2009 and 2013) and for the E48-9 test of the LV 148 standard. The four signal switches (SS) can also be used to interrupt bus signals, e.g. CAN, LIN, BroadR-Reach \*, FlexRay etc.

\*an adaptation for the SS is necessary



Power output stage

The power switch (PS) allows control of output powers up to 3000W in PWM mode (100kHz, 50%) and up to 7500W DC at 60V.

## TECHNICAL DATA

Term	POWER SWITCH (PS)	SIGNAL SWITCH (SS)
Voltage range		60V
Continuous current	75A or 125A	2A
Current range	100mA to 75A/125A	100uA to 2A
Current peak	1500A	3,5A
Interruption time		<500ns at 60V
Overcurrent switch-off time	600 A for 2 ms 1500A for 100us	3,5A for 700us
Current direction	Unidirectional	Bidirectional
Rise time (10-90%)	$t_r < 100\text{ns}$	$t_r < 80\text{ns}$
Fall time (90-10%)	$t_f < 100\text{ns}$	$t_f < 100\text{ns}$
Delay time	<700ns	<600ns

## SAFETY FUNCTIONS

Current monitoring	On overcurrent and short-circuit, unidirectional	All switches on overcurrent and short-circuit, unidirectional
Temperature monitoring	Power Switch structure	none

## ADDITIONAL FUNCTIONS

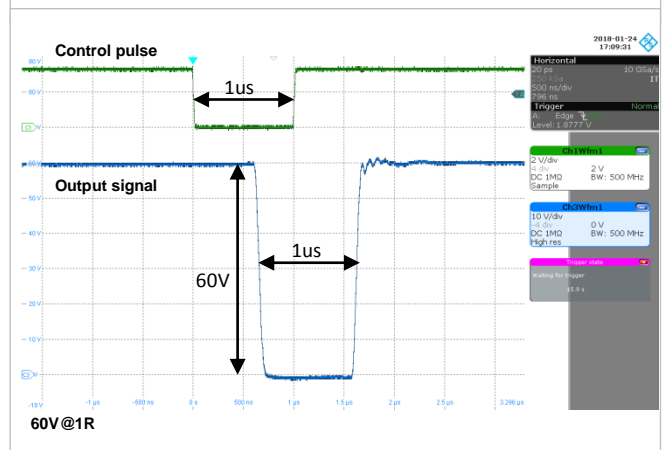
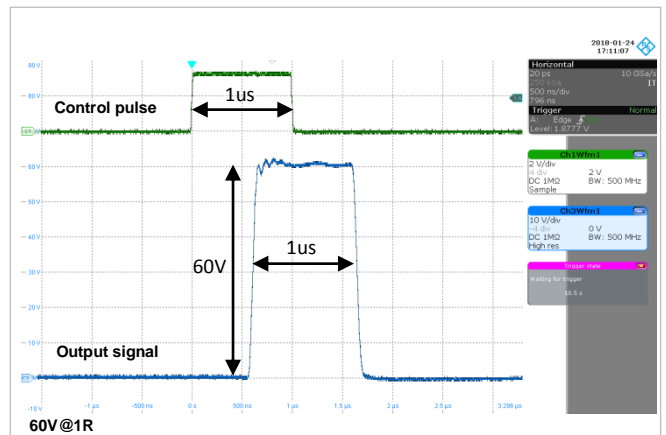
Activation of an input capacitor	yes	none
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## TRIGGER

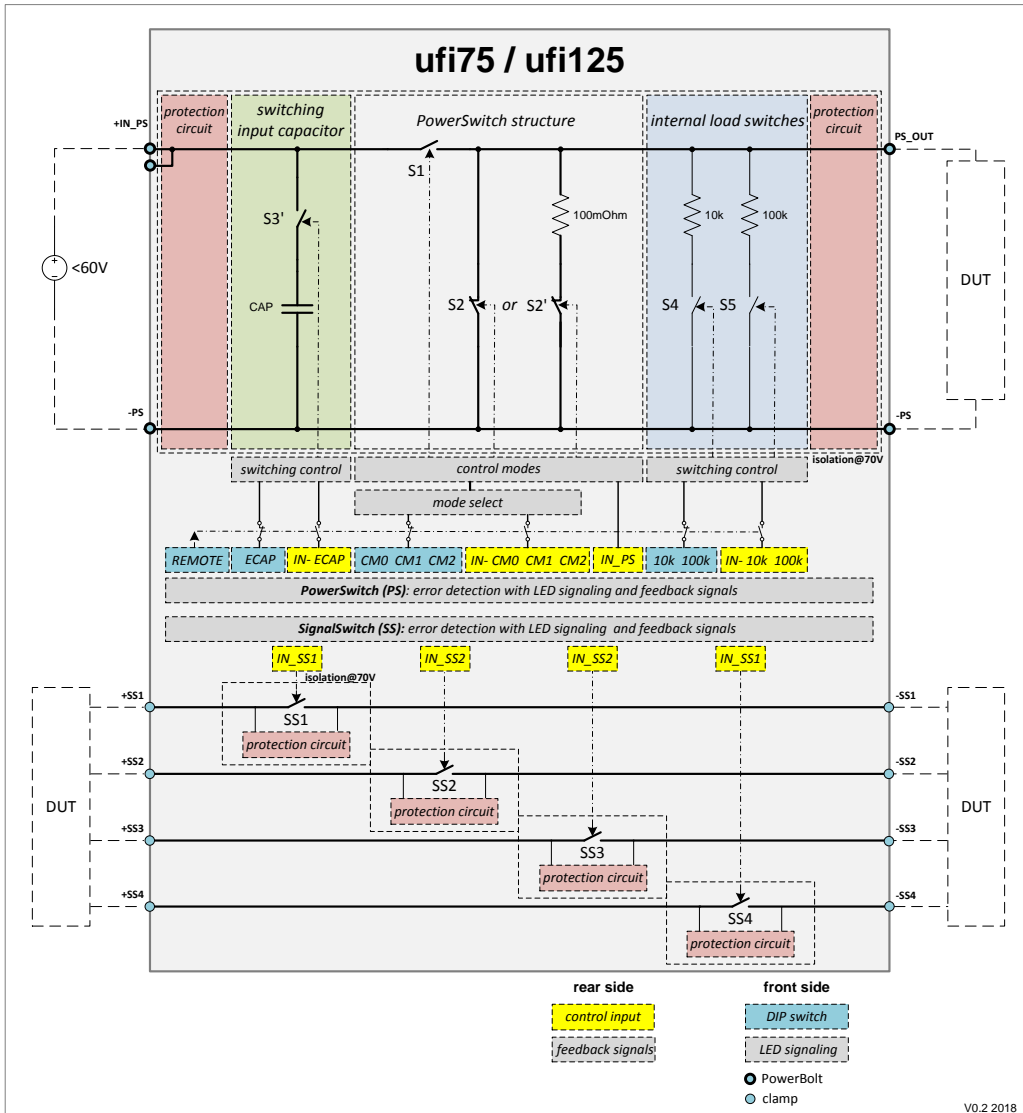
Trigger input (independently switchable)	IN_PS over BNC connector	IN_SS1 to IN_SS4 over BNC connectors
Frequency monitoring		Trigger signal <100kHz
Trigger input level		3,3V to 20V

## MISCELLANEOUS

Adaptation power supply and DUT	POWER SWITCH (PS) <10mOhm, bis 35mm <sup>2</sup>	
Internal loads	10k, 100k for PS	
Input source support	At any time on and off switchable support of 8000uF	



SWITCHING DEVICE ARCHITECTURE



CONFIGURATION OPTIONS (PS)

LABORATORY MODE

Configuration is possible over the DIP Switch on the front side of the device. (CM = Control mode, ECAP = Input source support)

AUTOMATION MODE

Configuration is possible over the remote interface on the back side of the device (D-Sub connector)

The CM (Control Modes) enable the independent switching of every switch for S1 or S2 and the complementary switching mode for S1+S2 or S1+S2', in order to support the E10 and E13 tests of the LV 124 norm.

GENERAL DATA

Size	19" / 3HE / 450mm x 360mm x 145mm (length x width x height)
Weight	5 kg
Power supply	12V/1A with external power supply plug
Temperature range	0°C to 50°C
Air humidity	25% to 75% non-condensing
Air pressure	86kPa (860mBar) to 106kPa (1060mBar)
EMC	DIN EN 55011:04/2011; CE - Label

FOR INDOOR USE ONLY!

ACCESSORIES

Cable harness	twisted, max. length 0,5m
Norm resistances for PS	1 Ohm, 100 Ohm, 1 kOhm