DTS8710
UIS Controller

VXI instruments
the test solutions provider

TECHNICAL DATA SHEET

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

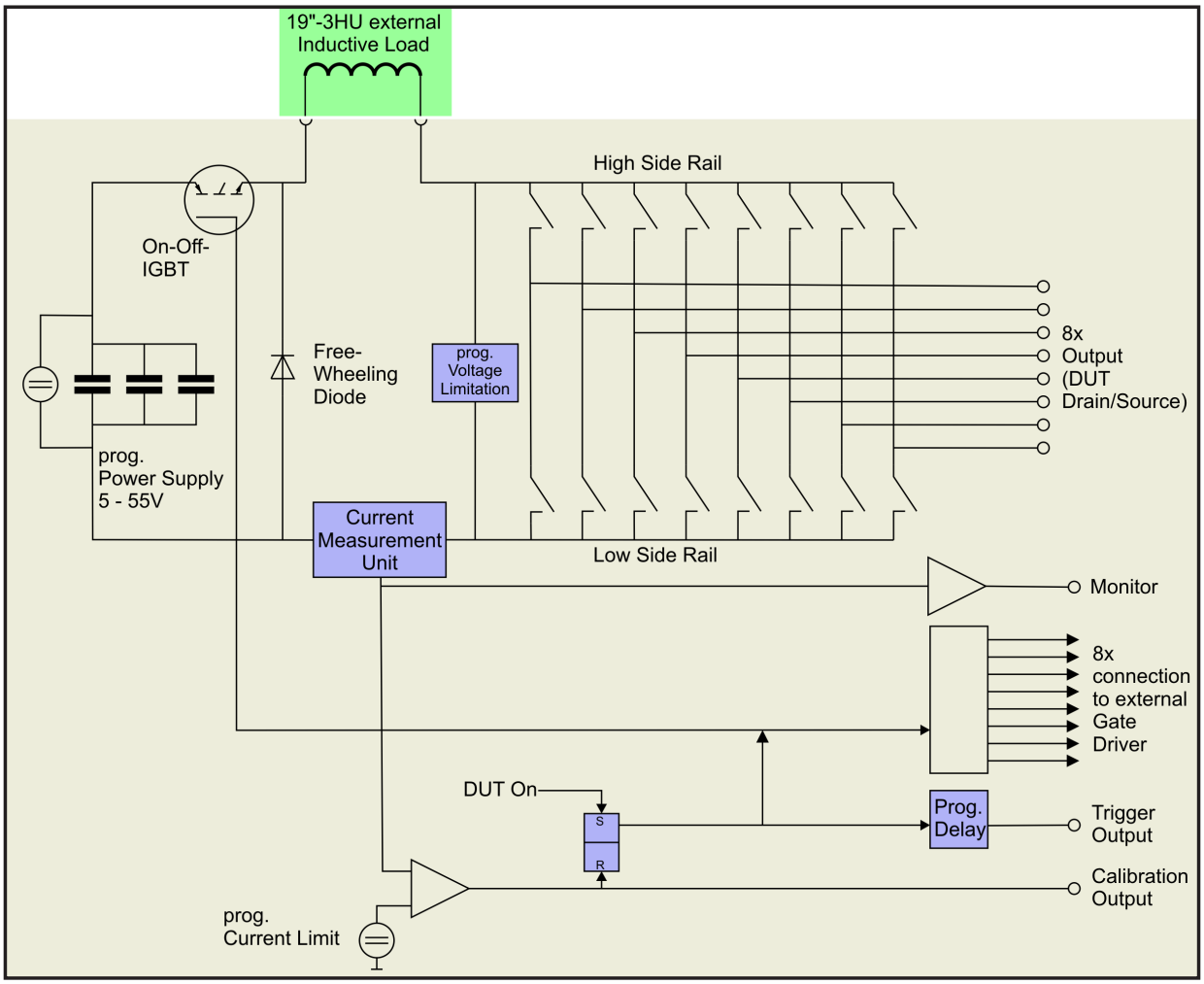
Features

- Programmable pulse energy supply
- Peak current up to 400 A
- Maximum output energy 4,000 mJ
- Trigger output with programmable delay
- Gate control signals for up to 8 DUTs
- Integrated 2 x 8 matrix allows flexible DUT connection
- Internal programmable power supply
- Programmable voltage limitation up to 160 V
- Integrated current monitor
- Controller for flex inductive load AXL8702

Product Information

The DTS8710 in combination with AXL8702 allows to supply a precisely programmable energy which will be discharged by the DUT during the avalanche effect.

A programmable supply voltage allows the control of the current slew rate during the charging phase.



- The paths for the DUT current are designed for a peak current of 400 A and 78 A effective.
- The overvoltage across the inductor is limited to approximately 100/120/140/160 V.
- The DTS8710 generates a user-programmable hardware trigger signal.
- This trigger signal reflects the duration of driving the gate of the DUT. It can be timeshifted by a delay in the range from 0 to 20 ms with a resolution of 50 ns.
- The internal IGBT can operate either in the mode "GATED", or in the mode "CONT":
  1) In the mode "GATED" the IGBT is driven simultaneously to the gate of the DUT.
  2) In "CONT", the IGBT is switched on until timeout expires.
- The timeout is programmable within 0 to 100 ms (default: 30 ms) with a resolution of 50 ns.

General	Specification	Comment
AC line voltage	230 V_{AC} ±10%, 47 Hz ... 53 Hz	
Power consumption	<500 W	
Operating temperature	0 ... 40°C	
Operating altitude	<2,000 m	
Relative Humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Size	19", 3U, depth ≈770 mm[1]	
Weight	≈19 kg	

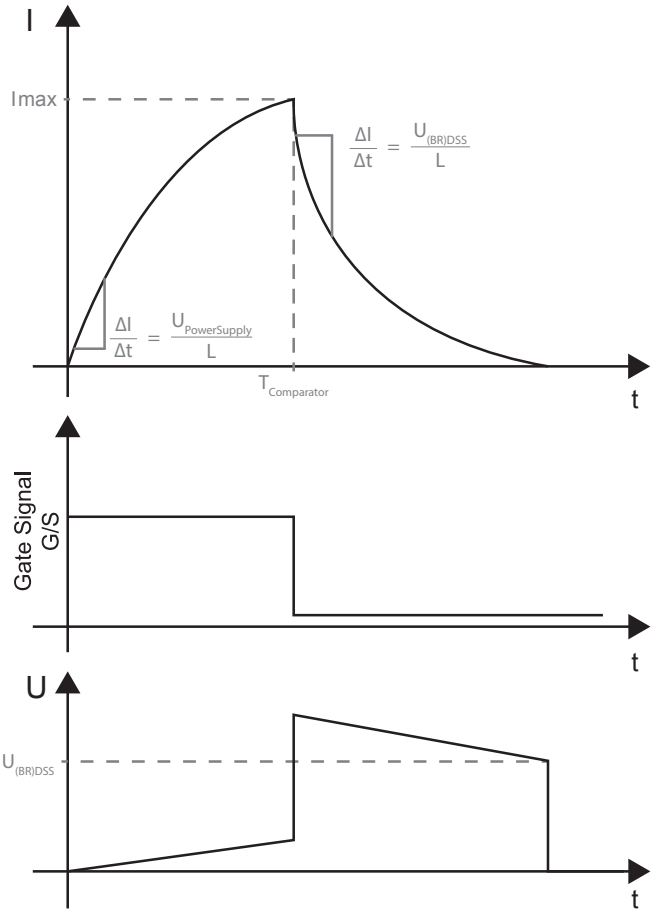
[1] Including cabling.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

What is unclamped inductive switching?

"Whenever current through an inductance is quickly turned off, the magnetic field induces a counter electromagnetic force (EMF) that can build up surprisingly high potentials across the switch. Mechanical switches often have spark-suppression circuits to reduce these harmful effects that result when current is suddenly interrupted. However, when transistors are used as the switches, the full buildup of this induced potential may far exceed the rated breakdown ($V(BR)_{DSS}$) of the transistor."

— Vishay AN601



DUT Control	Value	Comment
Gate signal I_{SOURCE} [1]	-2.8 A	
Gate signal I_{SINK} [1]	4.3 A	
Trigger signal HI-Level [2]	TTL	I_{max} = 24 mA
Trigger signal LO-Level [2]	TTL	I_{max} = 24 mA
Calibration signal HI-Level [3]	TTL	I_{max} = 24 mA
Calibration signal LO-Level [2, 3]	TTL	I_{max} = 24 mA

DUT Power	Value	Comment
Maximum voltage	160 V	Selectable limits: 100/120/140/160 V
Maximum current	400 A	Depends on the selected inductance
Maximum system energy	4,000 mJ	

Current Monitor	Value	Comment
Full range (400 A)	5 V	

Internal Power Supply	Value	Comment
Voltage range	5 ... 55 V	
Maximum current	7 A	
Maximum power	336 W	

Measurement Unit	Value	Comment
Range	10 A ... 400 A	
Accuracy	±1% of range ±2 A offset	

Ordering Information	Comment
Option FE [4]	Front panel display
Option GPIB [4]	IEEE488 interface
Option USB [4]	USB 2.0 interface
Option LAN [4]	Ethernet interface
Option EPCIE [4]	External PCIe interface
Option RS232 [4]	Serial interface
Option Trigger	External trigger I/O
Option RMK	19" Rack mounting Kit

1 Gate signal is active until the test current reaches the programmed current limit, but only until timeout (30 ms).
2 The trigger signal reflects the duration of driving the gate of the DUT. It can be timeshifted by a delay in the range from 0 to 20 ms with a resolution of 50 ns. The trigger signal is active high by default. The command "TRIG_INVERT" can activate an inversion to low active.
3 Comparator signal is high when the DUT power output current exceeds the programmed current limit.
4 One option is mandatory.

VX Instruments GmbH
Phone: +49 871 93 15 55-0
E-Mail: sales@vxinstruments.com

Revision Date: 2018-01-10