



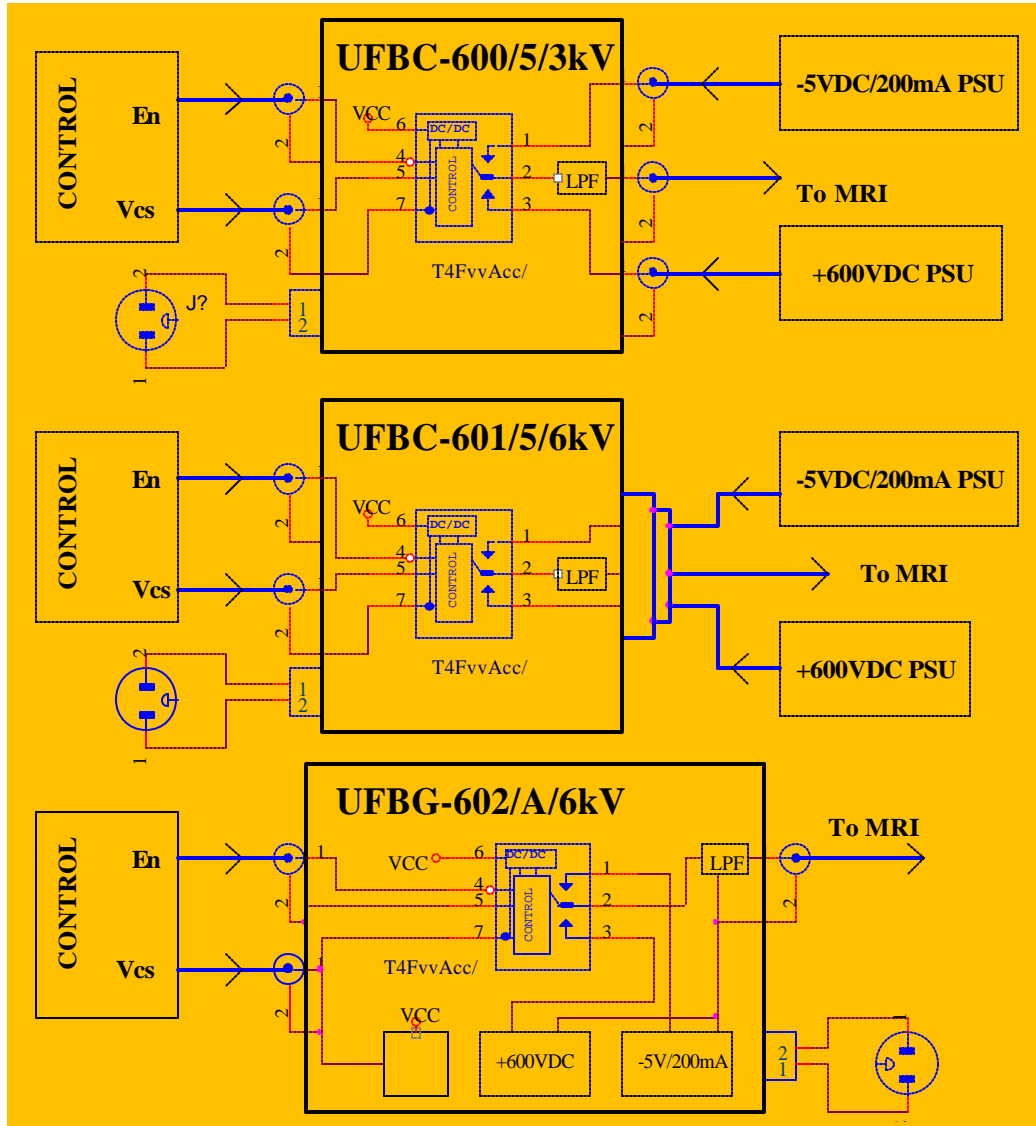
VSHolding LLC

TECHNOLOGIES FOR PEOPLE IDEAS



Advance news release, included prices active to March 1, 2016

UL certified the UFBC-601/XXX model in 2014 and now we're submitting the UFSG-602/XXX



Ultra-fast, bipolar pulse generating devices deliver bias voltages for controlling conductivity of high-voltage PIN diode during Magnetic Resonance Imaging and Spectroscopy. Brief descriptions of each device, useful attachments, and prices are included.

NOTE: A higher power SPDT&N switch will be installed in models (with “/+” suffix) manufactured from March 1, 2015. The switch is rated at 3.4 amps average (rms) and capable of delivering up to 36.0 amps pulses.

NOTE: All UFBG-602/xxx models are 100% Solid-State, with built-in electronic protections.

Here are families of available devices:

UFBC-600/R/3kV	Ultra-Fast Bias Control, rated at 3 kV, basic model
UFBC-601/R/5/6kV	Ultra-Fast Bias Control, rated at 6 kV, with built-in +5 VDC power supply
IUFBG-602/A/D/6kV	Ultra-Fast I-V Bias Generator, all voltages included for system integration
UFBG-602/AR	Ultra-Fast I-V Bias Generator, all voltages included, +600 VDC bias is redundant
IUFBG-602/AR/D	Same as UFBG-602/AR plus, made for system integration

		<u>1-3</u>	<u>4-10</u>	<u>11-25</u>	<u>26-50</u>
UFBC-600/5/3kV	EDR88104/5/H3	\$5,046.20	\$4,388.00	-5%	-2.5%
UFBC-600/5/3kV/+	EDR88104/5/H3/+	\$5,600.50	\$4,870.00	-5%	-2.5%
UFBC-601/5/6kV	EDR88109/5/H6	\$8,478.95	\$7,373.00	-5%	-2.5%
UFBC-601/5/6kV/+	EDR88109/5/H6/+	\$8,987.25	\$7,815.00	-5%	-2.5%

All below models rated at 6kV I/O isolation certified included +5VDC for a control, and +600V and -5V/200mA bias power supplies

UFBG-602/A	EDR88111/A	\$14,823.50	\$12,890.00	-5%	-2.5%
IUFBG-602/A/D	EDR88111/A/D	\$18,332.15	\$15,941.00	-5%	-2.5%
UFBG-602/AR	EDR88111/AR	\$16,302.40	\$14,176.00	-5%	-2.5%
IUFBG-602/AR/D	EDR88111/AR/D	\$19,855.90	\$17,266.00	-5%	-2.5%

Extension cords and test loads NOTE: 1.0 feet (1ft) = 30 cm

		<u>1-3</u>	<u>4-10</u>	<u>11-25</u>	<u>26-50</u>	
TL-302	EDR88008	+10%	\$274.00	-5%	-2.5%	a test load with output to an oscilloscope
TL-302/S	EDR88008/S	+10%	\$367.00	-5%	-2.5%	a test load with output to an oscilloscope or MRI

For UFBC-601/xxx models

CC-10kV	EDR88015	+10%	\$234.00	-5%	-2.5%	a SHV circular connector
CC-10kV/1F	EDR88015/1F	+10%	\$398.00	-5%	-2.5%	a circular connector with one foot cable
CC-10kV/xF	EDR88015/xF	+10%	see below	-5%	-2.5%	a circular connector with "x"-foot long cable
Replace "x" with desired number of feet and add \$32.75 for each excess over foot. Example for a 10-foot cable:						
CC-10kV/10F	EDR88015/10F	+10%	\$725.50	-5%	-2.5%	a circular connector with 10-foot long cable,

JB-10kV-600V/1F	EDR88010/1F	+10%	\$656.00	-5%	-2.5%	a 1'- extension cord with a test load
JB-10kV-600V/xF	EDR88010/xF	+10%	see below	-5%	-2.5%	custom "x"-foot long extension cord
Replace "x" with desired number of feet and add \$32.75 for each excess over foot. Example for an 11-foot cable:						
JB-10kV-600V/11F	EDR88010/11F	+10%	\$983.50	-5%	-2.5%	an extension cord made with an 11-long cable

For UFBG-602/xxx models

SHV-7.5kV	EDR88014	+10%	\$109.00	-3%	-2.5%	a SHV (F)-plug
SFH-BNC(F)/1F	DR88014/F/1F	+10%	\$228.00	-3%	-2.5%	a SHV(F)-to-BNC(F) cable with a 1' long cable
SFH-BNC(M)/1F	EDR88014/M/1F	+10%	\$228.00	-3%	-2.5%	a SHV(F)-to-BNC(M) cable with a 1' long cable
SFH-BNC(F)/xF	EDR88014/F/xF	+10%	see below	-3%	-2.5%	a SHV(F)-to-BNC(F) or -BNC(M) cable of any length

Replace "x" with desired number of feet and add \$15.27 for each excess over foot. Example for a 10-foot cable:
SFH-BNC-F/10F EDR88014/10F +10% \$380.70 -3% -2.5% an extension cord with 10-foot long cable

SFH-TL-302/S/M/1F	EDR88016/S/M/1F	+10%	\$595.00	-3%	-2.5%	a 1ft-extension cord with a TL-302/S test load
SFH-TL-302/S/M/xF	EDR88016/S/M/xF	+10%	see below	-3%	-2.5%	a xF-extension cord with a TL-302/S test load

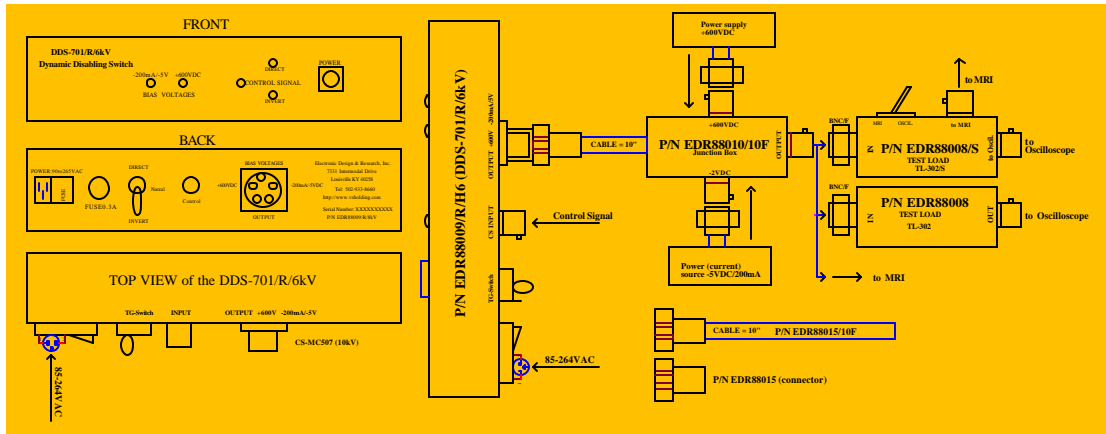
Replace "x" with desired number of feet and add \$15.27 for each excess over foot. Example for a 10-foot cable:
SFH-TL-302/S/M/10F EDR88016/S/M/10F +10% \$747.70 -3% -2.5% an 10-foot extension cord with a TL-302/S test load

Suffixes:

- /5 an AC/DC +5.0 VDC converter for internal logic is included
- /3kV rated at 3kV input/output isolation
- /6kV rated at 6kV input/output isolation, suitable for medical (hospital) installations
- /xF number of feet
- /A an AC/DC +5.0 VDC, +600 VDC and -5 VDC/200 mA bias power supplies all are included
- /D an instant RF Amplifier control is included
- /AR a redundant (hot-swapped) +600 VDC bias power source additional to what is included in "/A" model

UFBC-601/xxx models and available attachments

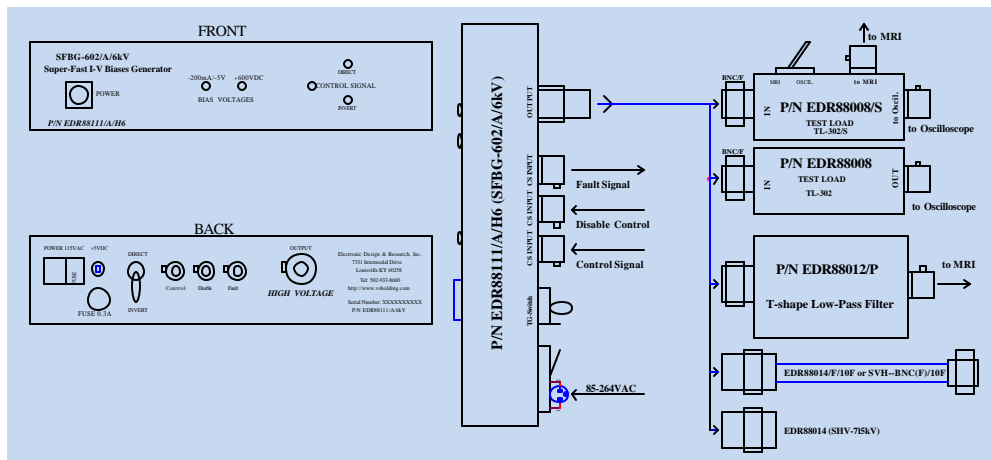
The UFBC-601 was designed for delivering precisely shaped (rectangular) bias voltages for various high frequency applications such as controlling a PIN diode, etc. It's capable of delivering pulses shorter than 10 μ s with less than 3.0 μ s rising and falling slopes and to 50 KHz continuous frequency. The UFBC-601 series was designed for high-current applications. It's capable of delivering up to 36 amps of pulsing current (3.4 amps average). However, since bias voltages are independent sources, there is no guaranty that UFBC-601 will be able to deliver described above performance if the sources are inadequate for such task.



UFBG-602/xxx models and available attachments

The UFBG-602 model was developed for delivering highly precise and constant biases powers. It was designed for trouble-free operation. A constant +600 VDC power supply provides enough energy for driving a 20.0 Kohm load/30 mA rms (50% duty cycle) up to 1.5 KHz continuously and 3.0 amps at 1%. Automatic overload protection turns off the power supply; device must remain off for 30 seconds to restore its functions.

A -5 VDC/200 mA power source delivers constant 200 mA into a load that may vary from zero to 22 ohms.



The UFBG-602 generates all required biases from internal power sources

Continues short circuit protection		Continues short circuit protection	
Voltage accuracy	605 V to 617 V	Current accuracy	+1%
Temp. Stability	+/-0.02%/°C	Minimum load	zero oh m
Temp. Operation	-45°C to 85°C	Maximum load	22 ohm
Average maximum current	30 mA at 1.5 KHz	Temp. Operation and Stability are the same	
Switching time from one bias to the other is	150 nS		

Remarks:

- It is advisable having P/N EDR88008/S for “600 and 601” or P/N EDR88016/S for “602” devices. Both attachments were designed for checking out devices’ performance, having a PIN diode as a load simulates a real load. A 10:1 attenuated output to an oscilloscope and 1:1 to a RF Coil is provided.
- P/N EDR88010 developed and manufactured for USBG-601/xxx models for delivering bias voltages from external power sources to the device for its proper operation.

NOTES:

- 1.1 Prices are good until March 1, 2016. They may be changed in the future without notice.
- 1.2 A blank order (contract) guarantees prices and deliveries on any device within a three-year long-term limit.
- 1.3 All devices listed above are current and in production.
- 1.4 Any devices manufactured in the past are available for ordering. However, prices and delivery are not guaranteed because some components might be out of production and out of stock.
- 1.5 All foreign based customers: Terms Prepaid. USA based customers: Terms Prepaid unless authorized payment method to creditworthy customers: NET 30 Days.

Warranty: All EDR products come with a standard 18-month warranty. An extended warranty up to three years can be purchased for an additional 15%, or five years for 25%. Signing up for a 5-year extended warranty comes with automatic enrollment into an exchange program, in which case a device which has malfunctioned or needs calibration may be exchanged with a temporary replacement device within three working days.

Let us know if you need a switching device for generating bipolar, tri-polar or quad-polar pulses to meet your unique application. We can build a switching system for most voltages and currents. Some devices rated for higher currents are available off-the-shelf.

During the past twenty years, we have developed and are now manufacturing vast varieties of electronic devices. On the following page, some of them listed in a tree-shaped agreement for your information and amusement. We like challenging projects. If you've stumbled onto a problem and could not find a solution, let me know and I'll do the best to make it a reality.

Sincerely,

Vladimir A Shvartsman, Ph.D.
President
V_shvartsman@vsholding.com

For more info and placing order, please email your request to order@vsholding.com

Electronic Design & Research is a pioneer in developing and manufacturing high-speed, high-power relays/switches. Starting since 1998, we have produced vast varieties of Solid-State Modules and Devices. Our products have been used in thousands Defense related and industrial applications.

PIEZO DRIVERS
VIDEO SWITCHES
½ BRIDGE DRIVERS
CARDIO STIMULATOR
Q-TYPE HIGH-PASS FILTERS
PRECISION F-TO-V CONVERTER
SUPER-HIGH RESOLUTION EKG
SOFT-LANDING SOLENOID DRIVERS
50Hz/60Hz COMB NOTCH FILTERS
H-BRIDGE OR FULL-BRIDGE DRIVERS
SUPER-HIGH POWER, FAST SWITCHES
HIGH-POWER, HIGH-SPEED SWITCHES
UNIVERSAL ANALOG BUILDING MODULE
SIGNAL SWITCHING SEPARATING NETWORK
SOCKETS FOR RELAYS, SWITCHES AND DRIVERS
CHARGE-PUMP WIDE-BAND FM DETECTORS
LOW-NOISE, HIGH-VOLTAGE DC/DC CONVERTERS
DC-3PHASE AC RESONANCE MODE DRIVER FOR EV
DC-12PHASE AC RESONANCE MODE DRIVER FOR EV
PERPETUAL PULSE-WIDTH DISCRIMINATOR, US PATENT
½ AND H FUZZY LOGIC SOCKETS FOR VARIOUS RELAYS
FUZZY-LOGIC SPDT RELAYS, SWITCHES AND ½ DRIVERS
FULLY PROTECTED, SOLID-STATE DPST BRAKE, US PATENT
m-POWER SPST-NC AND SPDT-NO SOLID-STATE RELAYS
SINGLE POLE, SINGLE THROW RELAYS AND SWITCHES, (SPST)
NEUTRAL-CELL MULTICHANNEL SIGNAL PROCESSOR, US PATENT
POWER-DISTRIBUTING MODULE FOR MOTORCYCLES, US PATENT
SINGLE POLE, DOUBLE THROW RELAYS AND SWITCHES, (SPDT)
DOUBLE POLE, SINGLE THROW RELAYS AND SWITCHES, (DPST)
1-FORM B, SPST-NC (NORMALLY CLOSED) SOLID STATE RELAYS
CHARGE-AND-ADD, UP/DOWN DC/DC CONVERTERS, US PATENT
m-POWER CONTROLLER FOR MAGNETIC LATCHING VALVES, US PATENT
HIGH VOLTAGE, NANO-SECONDS RISE/FALL TIME, PUSH-PULL DRIVERS
1-FORM B AND 1-FORM A AND DPST-NC/NO SOLID STATE RELAYS
SUPER-LOW NOISE PREAMPLIFIERS FOR LOW AND HIGH IMPEDANCE SOURCES
m-CONTROL, HIGH-POWER SPST-NC, NORMALLY CLOSED RELAYS, US PATENT

We are working hard, bringing new devices to the market to meet your requests. Above is an incomplete list of the family of devices we have developed and are manufacturing. Most of them are covered by proprietary technologies and some of them are unique and protected by US patents. We keep a small number of popular devices in stock and are ready to ship them on demand. Our production capacities exceed 10,000 devices per month when two production robots are programmed and working at a full speed.

For your unique application that requires a different voltage, current or speed, ordering instructions (on the last page) could be useful in creating a new part and for summarizing what you need. Do not hesitate to send us an email: info@vsholding.com asking for additional information, delivery schedules and/or prices.