

Electronic Design & Research

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EDR's DIN RAILS and applications

Design to accommodate D1N, D2N & D3N packages

It fits industrial standard modules, such as IOC, OAC, ODC, D2W, CX & CMS

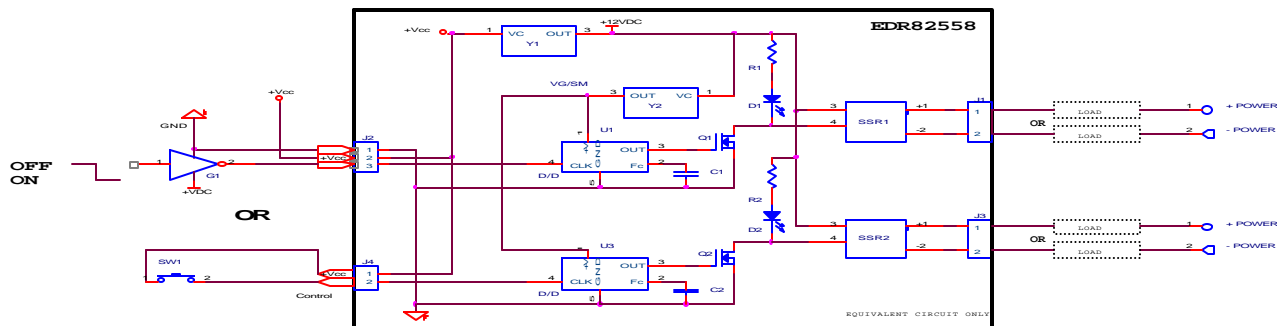
The EDR82558 is built with de-bouncing circuitry and a driver for easy interfacing with a PLC and other interfacing cards. It is especially useful with a high-speed Solid State Relay when the control comes from an electromechanical relays or other switch.

In the desire to satisfy the industry requirements we developed and manufactured four types of mounting boards. The mounting board is a dual-channel device, which is stackable up to eight, for a single DIN Rail. There are five types of boards available:

1. Direct driving with a LED to indicate the presence of a control signal (p/n EDR82555)
2. With a driver and optional de-bouncing circuitry (p/n EDR82558), please add /D to the part number
3. Built-in with a high-speed driver to enable a PWM and applications of up to 25 KHz (p/n EDR82604)
4. Built-in a latchable driver (p/n EDR82604) to design push-on/push-off controls.
5. A p/n EDR82910 allows using our D3F-type relays to implement a half-bridge and full-bridge driver.



A DIN Rail with two SSR installed



Specifications for the EDR82558

Power requirements	+ 26VDC – 34 VDC / 30mA for (EDR82558/24)			
Load	14Amps	and	28Amps	(please add /P to the part number)
Current surge	100Amps for 1 second for the EDR82588 and 150Amps for the EDR82558/2			
Logic Voltage Range	5VDC	12VDC	24VDC	3.2VDC to 32VDC
Logic Pick-up Voltage	2.8VDC	7VDC	15.6VDC	2.8VDC
Logic Drop-out Voltage	2.7VDC	5VDC	10.2VDC	2.7VDC
Logic Input Current	1.0 mA			
Turn-on time	200 nS		with de-bouncer	1.0 mS
Turn-off time	200 nS		with de-bouncer	0.2 mS
Output Voltage	up to 1,200 VDC/700VAC			
Isolation : input/output	3000VDC			
Isolation: output/output	5000VDC			
Operating Temperature	- 40 °C to + 85 °C/95% relative humidity, non-condensing			
Interface Connector	(Field)	6-32 screw terminals, wire from #12 to #24 AWG		
	(Logic)	screw-clamp terminal block, wire from #14 to #22 AWG		

EDR's DIN Rail is designed to accommodate a variety of Solid State Relays. For that reason, there is no fuse or snubbing network is standard. We would gladly accommodate your design requirements and install just anything for orders of 100 or more.

Electronic Design & Research Inc. * 7331 Intermodal Drive *** Louisville, KY *** 40258**

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Universal DIN Rail – EDR82558

Design to accommodate D2N & D3N packages
It fits industrial standard modules, such as IOC, OAC, ODC, D2W, CX & CMS

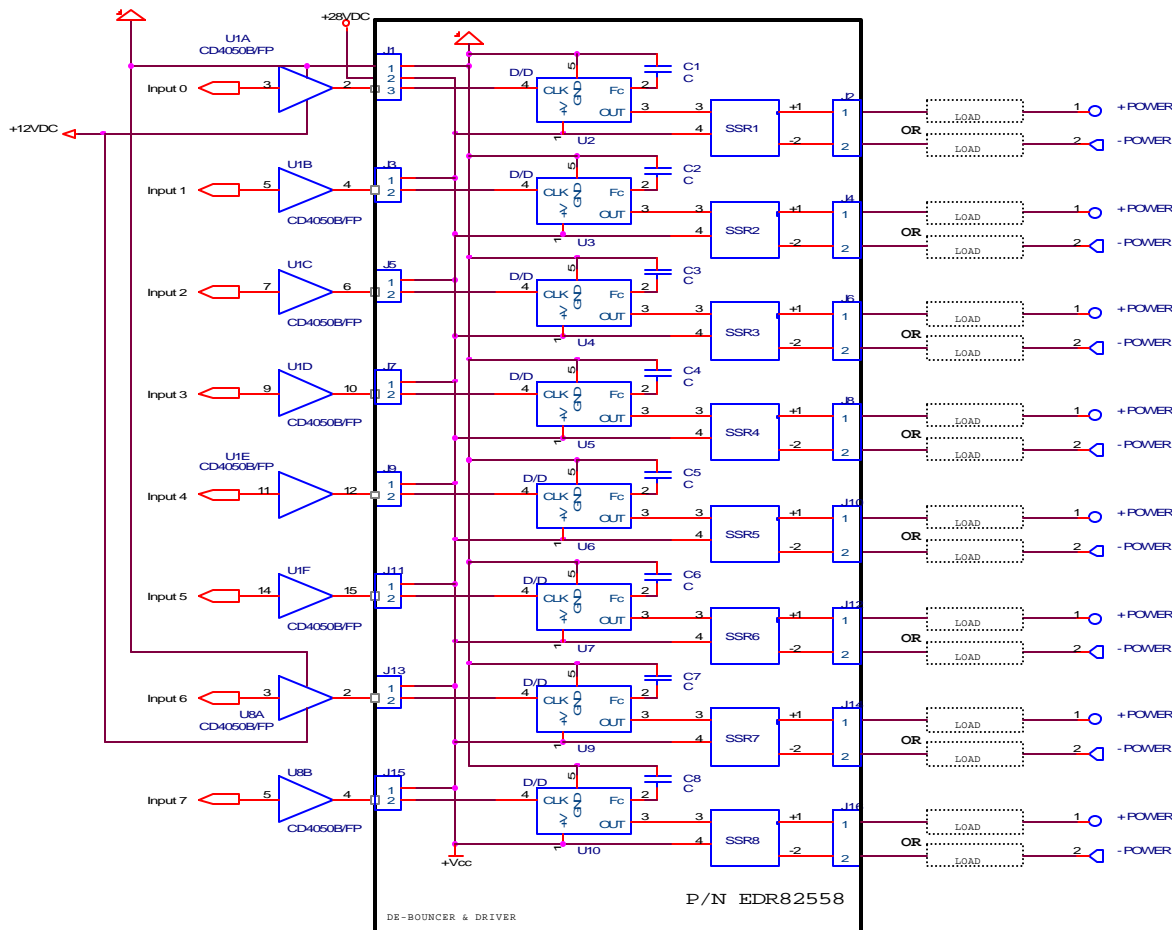
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Application Notes

Easy interfacing of a p/n EDR82558/8 to low-power CMOS logic

The universal DIN Rail is ideal for relay replacement in many applications and it allows easy interfacing to a computer. It provides excellent isolation between computer circuitry and field devices. The DIN was designed to accommodate a powerful Solid State Relay. It is especially suitable to accommodate a variety of low-speed, standard and high-speed EDR relays.



The DIN Rails, with EDR made Solid State Relays (SSR), provide eight channels of isolated outputs for the controlling and switching of AC or DC loads. Each channel provides up to 3000V of isolation between the field devices and the control logic. Typical uses and applications for DC and AC SSRs include switching the following loads: SOLINIODS, MOTORS, MOTOR STARTERS, LAMPs AND INDICATORS, and POWER DESTRIIBUTION.

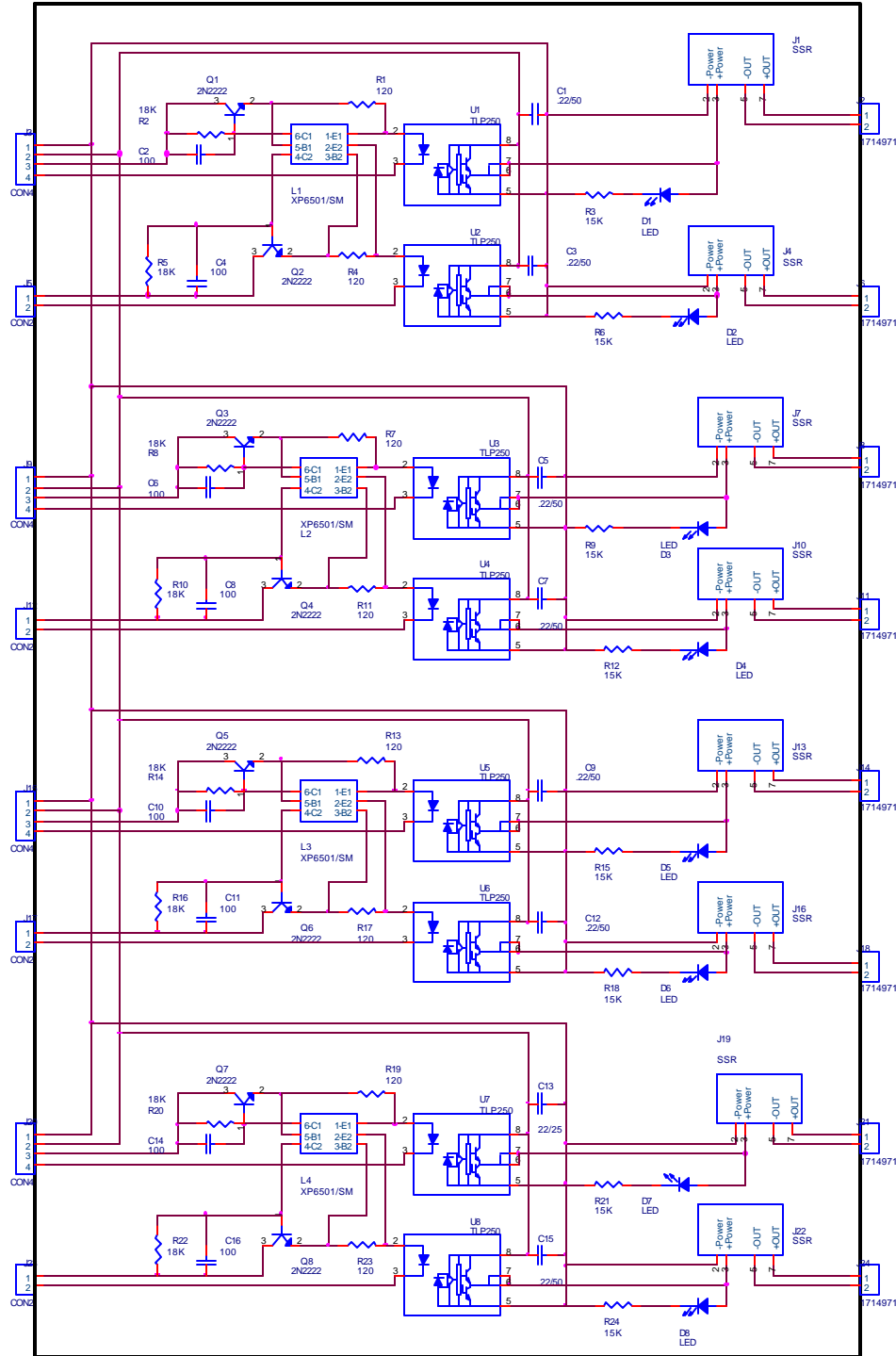
EDR82558 socket diameter is #16 (power outputs) & #18 (control inputs)
EDR82558/P socket diameter is #12 (power outputs) & #18 (control inputs)

ORDERING INFORMATION

EDR	82558	/n	/P	/D	/xx	/YY
MFG	p/n	4, 6 or 8	14Amps and "P" for 28Amps	de-bouncing;	5, 12, 24 or 3-32	16+/-2 or 28+/-2
		Number of channels	Terminal's maximum current		Control voltage	Power Supply

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Simplified schematic of the EDR82603/8

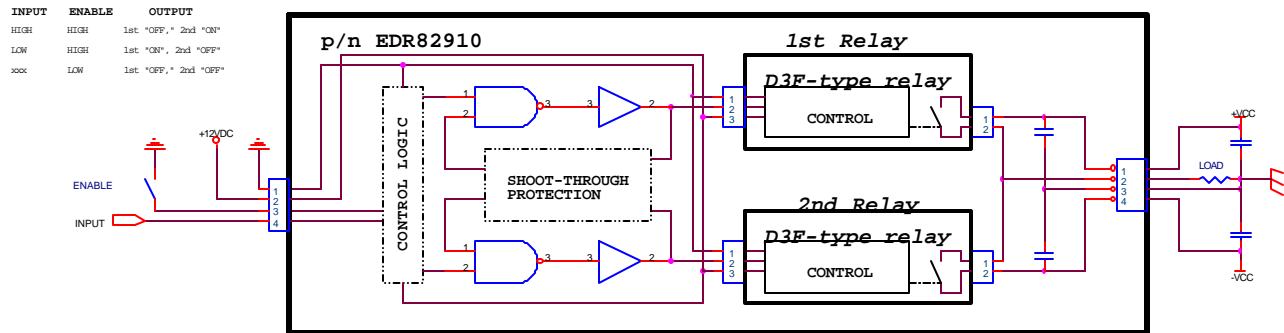


The EDR82603 designed to drive a D3D-type, medium speed Solid State Relays, DC-25 KHz frequency range. Double layers of insulation control signal/output power will insure the best protection of a control circuitry among any through industrial standards.

The EDR82603 is well suited to drive a powerful load with a precise PWM controls.

Dual Driver EDR82910 for Solid State Relays in the TOTEM, half-bridge configuration or analog switch configurations

The EDR82910 is a high frequency, dual driver, optimized to drive two Solid State Relays in the break-before make-synchronized topology. Combined with EDR's made relays/switches the EDR82910 drives source and sink up to 28A rms current. The EDR82910 also features a three-state PWM input will prevent a negative transient on the output voltage when the input is being shut down. The EDR81910 has the capacity to switch efficiently at frequency up to 1.5 MHz. The DIN RAIL has an internal logic circuitry that prevents shoot-through current even at a high switching frequency. It prevents both relays from conducting simultaneously.



Signified schematic and load hook-up of the EDR82910

Product Highlights

- Drives two EDR's made relays/switches, DIN-, D2N-, D3N- and D3F- types Solid State Relays
- Electrical isolation 3000V and 5200V
- Switching frequency DC to 1.5 MHz
- Switching current from 0A till 28A rms
- Switching voltage from 0V till 1700 V
- Duty cycle: 0.. 100%
- Signal and enable inputs are CMOS (2KOhm)
- Shoot-Trough Protection
- Three-State PWM Input for Power Stage Shutdown
- Non of relays activates when the input if floating
- A single power supply, 12VDC
- Matching Delay Between Inverting and Noninverting output

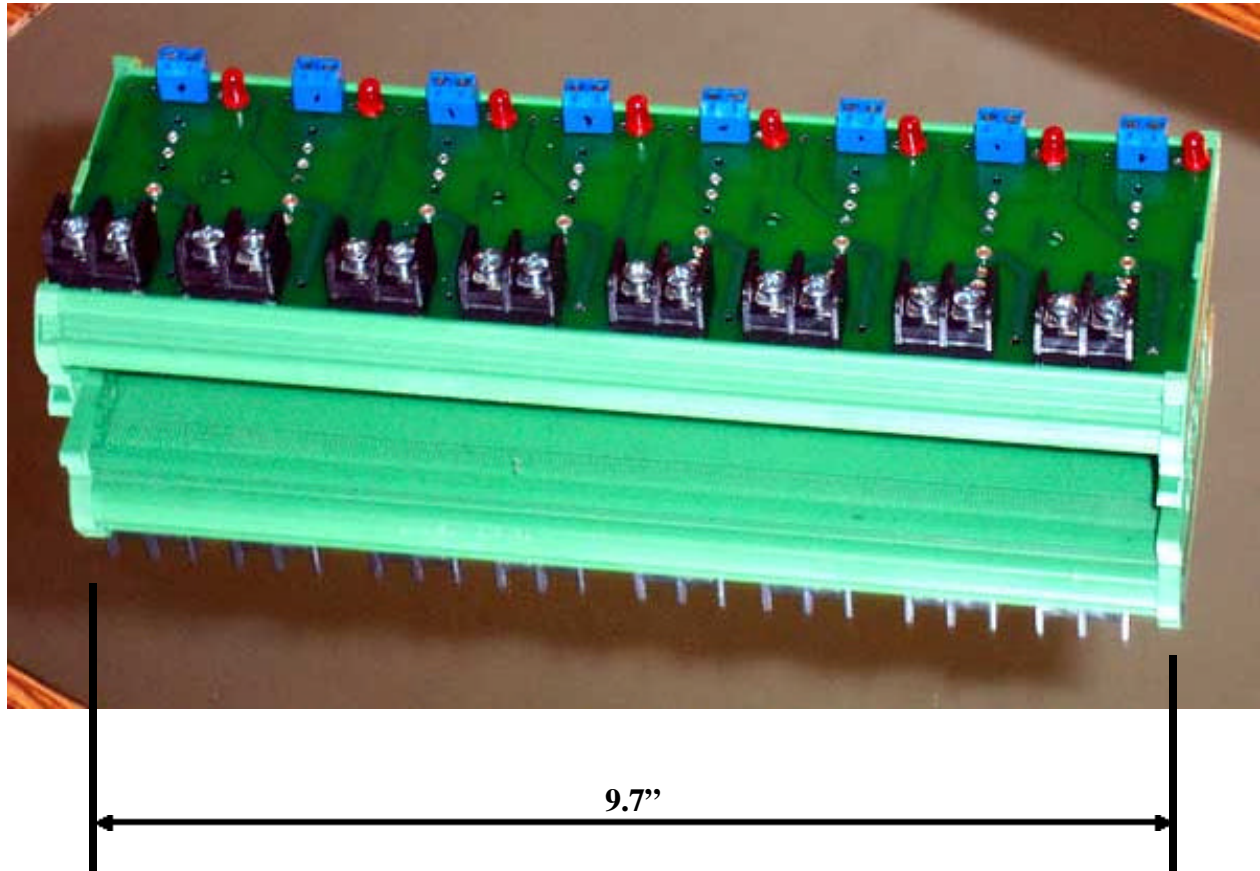
Applications

- Inverters
- A low cost Motor control
- Converter
- Power engineering
- Laser driver and radiology
- RF generators
- Research
- Analog switch
- Power Switching
- Power-Supply Modules

Absolute Maximum Ratings

Parameter	Test Condition	min	max	unit
Supply voltage Vcc			12	VDC
Supply Current Icc	DC-10KHz		80	mA
Supply Current Icc	25KHz – 100KHz		160	mA
Supply Current Icc	120KHz – 300KHz		220	mA
Logic input voltage	to GND		ON	inverted SSR
Logic input voltage	to + 5VDC		ON	non-inverted SSR
Output Current	dependent on selected SSR		0	28 A rms
Output Voltage	dependent on selected SSR	20	1700	VDC
Operating temperature	industrial type	-35	+85	C°
Operating temperature	military type	-45	+95	C°

8-positions DIN RAIL (p/n EDR82555/8)



EDR's DIN RAIL systems are designed to accommodate all industrial standard input and output modules, such as **IOC, OAC, ODC, D2W, CX and CMS types**. It also houses EDR's Solid State Relays assembled in D1, D2 and D3 packages.

All variations of our DIN RAIL, such as EDR82555, EDR82558, EDR82603 and EDR82604 are the same size. They are 9.7" long, 3.0" wide and 1.5" tall.

The input screw-type terminal depends on selected options. It can be made with 2-, 3-, 4-, and five terminals to accommodate various types of SSRs.

The output is made as 2-pin and 3-pin terminals. Three-pin terminals are used for a TOTEM output relay.