

Power Supplies

DC Input

Multi-output, Long-Life

R Series TDR-M

The R series TDR-M type are 3-output power supplies with combinations of +5V, $\pm 12V$ or $\pm 15V$ so as to be suitable for various devices using a microcomputer. These products are available for a wide variety of devices such as an electronic exchange, a vehicle-mounted device, and uninterruptible device.

FEATURES

- DC.24V input.
- High-reliability 3-outputs power supply.
- Compact, lightweight, and high efficiency.
- Remote ON-OFF function.
- Remote sensing function (5V only).

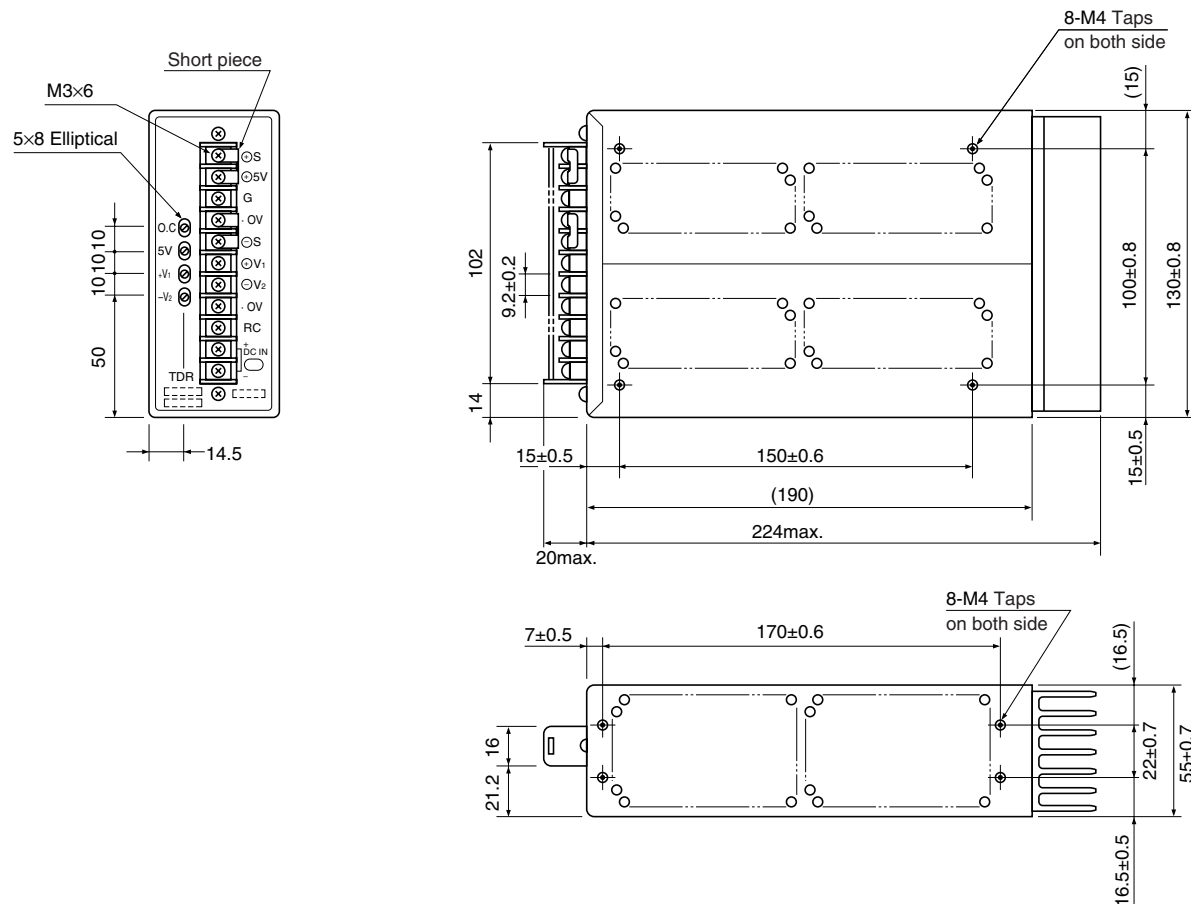


PART NUMBERS AND RATINGS

Part No.	Input voltage	Output current(A)				
		+5V	+12V	-12V	+15V	-15V
TDR-001M	20 to 30V	10	1	1		
TDR-002M	20 to 30V	10			1	1

TDR75W TYPE

SHAPES AND DIMENSIONS



Dimensions in mm
±1mm : without specified dimensions

- Do not insert M4 tap installation screws more than 7mm from surface of power supply.

- All specifications are subject to change without notice.

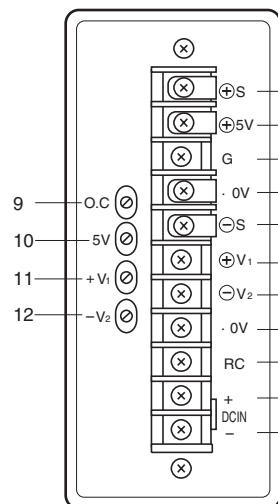
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TERMINAL DESIGNATIONS AND FUNCTIONS



Terminal No.	Designations and functions	
1	Remote sensing terminals(+S, -S)	These terminals are used to compensate voltage loss from the output terminal to a load. Normally they are shorted with a metal bar.
2	+5V DC output terminals(+5V, 0V)	Connect to load.
3	Frame ground terminal(G)	Connect to earth ground. This is connected to the case.
4	+NV DC output terminal(+V1)	Connect to load.
5	-NV DC output terminal(-V2)	Connect to load.
6	Ground terminal(0V)	Ground terminal for +NV and -NV.
7	Remote ON-OFF terminals(+RC, -RC)	The output can be turned on or off by an open or close control between the RC terminal and the ground terminal 6 (when open, output is on).
8	DC input terminals(DC INPUT, +, -)	Connected to DC input line.
9	+5V overcurrent value adjustment trimmer(OC)	Capable of adjusting a setting value of the +5V output overcurrent.
10	+5V output voltage adjustment trim(5V)	+5V adjusts output voltage.
11	+NV output voltage adjustment trim(+V1)	+NV adjusts output voltage.
12	-NV output voltage adjustment trim(-V2)	-NV adjusts output voltage.

SPECIFICATIONS AND STANDARDS

Part No.		TDR-001M			TDR-002M			
Rated output voltage and current*		+5V • 10A	+12V • 1A	−12V • 1A	+5V • 10A	+15V • 1A	−15V • 1A	
Input conditions								
Input voltage E _{dc}	V	20 to 30[Rating: 24]						
Input current	A	6.5max.[Fuse rating: 7A]						
Efficiency	%	74typ.[25°C, input and output ratings]						
Output characteristics								
Output voltage E _{dc}	V	+5	+12	−12	+5	+15	−15	
Maximum output current	A	10	1	1	10	1	1	
Maximum output power	W	74						
Voltage variable range E _{dc}	V	4 to 5.5	9.6 to 13.2	9.6 to 13.2	4 to 5.5	12 to 16.5	12 to 16.5	
Overvoltage threshold E _{dc}	V	6 to 6.9	13.7 to 15.5	13.7 to 15.5	6 to 6.9	17 to 19	17 to 19	
Overcurrent threshold	A	11.4 to 13.2	1.08 to 1.32	1.08 to 1.32	11.4 to 13.2	1.08 to 1.32	1.08 to 1.32	
Voltage stability	Source effect	%	0.8max.(0.4typ.)[Within the input voltage range]					Total effect 2max.(1typ.)
	Load effect	%	1max.(0.4typ.)[10 to 100% load]					
	Temperature effect	%	1.3max.(0.6typ.)[Ambient temperature: 0 to +50°C]					
	Drift(Time effect)	%	0.5max.[25°C, input and output ratings, after input voltage ON for 30min to 8h]					
Ripple E _{p-p}	mV	5V: 40max. ±NV: 50max.						
Ripple noise E _{p-p}	mV	Output voltage×1%+50max.						
Auxiliary functions								
Overvoltage protection		Voltage shut-down type, recovers upon reset(interval approx. 20s).						
Overcurrent protection		Rectangular type, automatic recovery.						
Remote ON-OFF		Yes(RC terminal and OV terminal of ±NV are shorted and turned OFF.)						
Remote sensing		Only 5V						
Constructions								
External dimensions	mm	130×55×224[H×W×L]						
Weight	kg	1.4max.						
Mounting method		Can be attached to 4 sides.						
Case material		Aluminum(Phosphoric acid anodized surface)						

* Current rating(maximum output current) is determined for 0 to +50°C. Derating is required when used outside this temperature range.

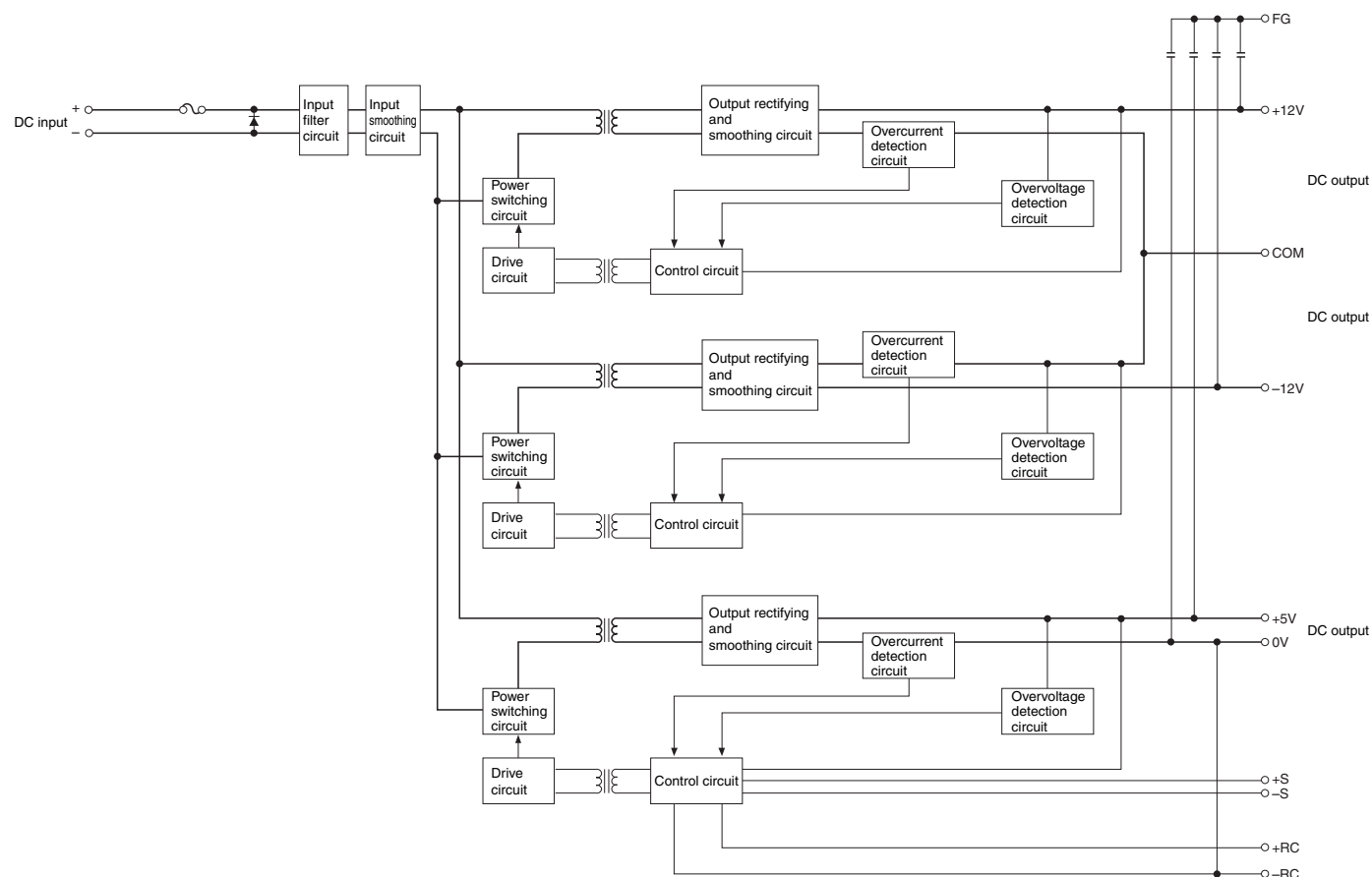
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BLOCK DIAGRAM



COMMON SPECIFICATIONS

Temperature and humidity		
Temperature range	Operating(°C)	0 to +60[Derating is necessary when operating environment temperature exceed 50°C.]
	Storage(°C)	
Humidity range	Operating(%)RH	20 to 95[Maximum wet-bulb temperature: 35°C, without dewing]
	Storage(%)RH	
Vibration and shock		
Vibration	5 to 10Hz	All amplitude 10mm[3 directions, each 1h]
	10 to 55Hz	Acceleration 19.6m/s ² (2G)[3 directions, each 1h]
Shock	Acceleration	196m/s ² (20G)[3 directions, each 3 times]
	Pulse duration	11±5ms
Withstand voltage and insulation resistance		
Withstand voltage	Input terminal to case(G)	Eac: 1.5kV, 1min[Normal temperature, normal humidity, cutout current 10mA]
	Input terminal to output terminal	
Insulation resistance	Input terminal to case(G)	Edc: 500V, 100MΩ min. [Normal temperature, normal humidity]
	Input terminal to output terminal	
	Output terminal to case(G)	

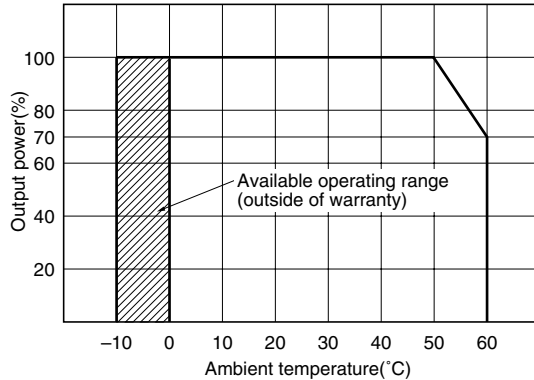
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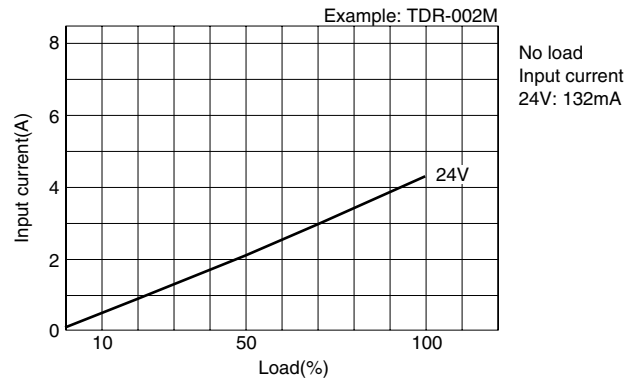
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OUTPUT POWER-AMBIENT TEMPERATURE(DERATINGS)

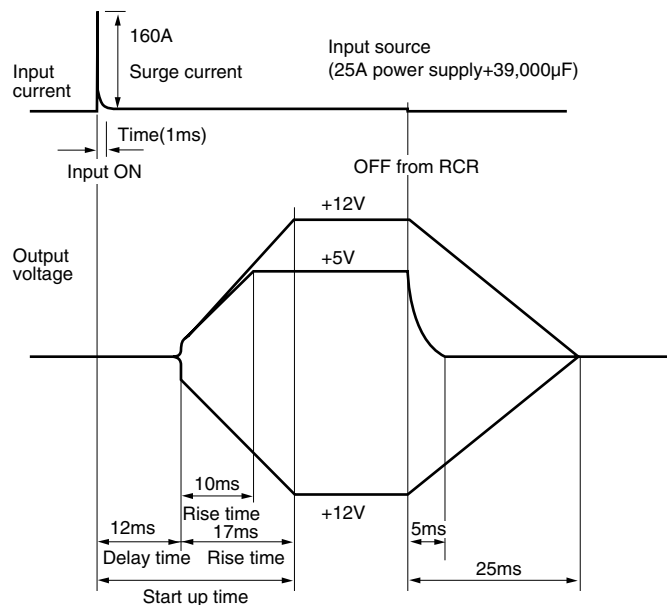


INPUT CURRENT



SURGE CURRENT, START UP / HOLD UP TIMES

Example: TDR-001M
Input voltage: DC.24V Load: 100%(5V/10A, ± 12 V/1A) Temperature: 25°C



REMOTE ON-OFF

Power supply output voltage can be turned on/off by this terminal for a power supply sequence or the like.

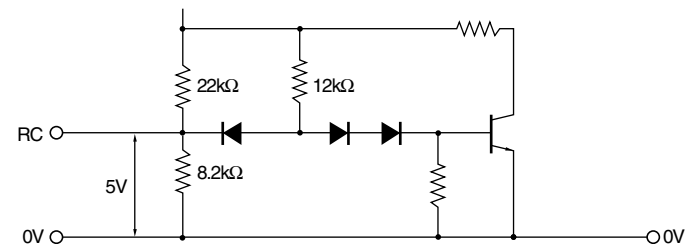
Between +RC and -RC: Turned on upon setting to high level (2.4 to 24V) or being open.

Between +RC and -RC: Turned off upon setting to low level (0 to 0.4V) or shorted.

The -RC terminal has the same level as 0V of an output of the DC output terminal.

Keep the +RC terminal open when not in use since it is internally pulled up.

REMOTE ON-OFF CIRCUIT



OTHER CONDITIONS

- Unless conditions are otherwise specified in the specifications or standards, 25°C and rated input-output should be applied.
- Ripple and noise (50MHz max.) were determined for 0 to +50°C temperature range and 10 to 100% load.

The input surge current is to be charged to a capacitor of an input smoothing circuit. This type of power supply is not provided with any special circuit for protection from surge current since surge current continues only for a short time in case of its occurrence. The magnitude of surge current depends upon a capacity (internal resistance) of the power supply for an input to this power supply and therefore an input source having a sufficiently large capacity is used at measurement. In a practical use, the surge current is lower than the value shown in the specifications.