



SY042 4-20mA LOOP CURRENT LIMITER



- ◆ Simple 2 wire connection.
- ◆ Easy adjustment of current limit
- ◆ Reverse polarity protection
- ◆ Compact DIN rail mounting
- ◆ No effect on calibration
- ◆ Up to 4 limiters in 1 compact case
- ◆ Fast response

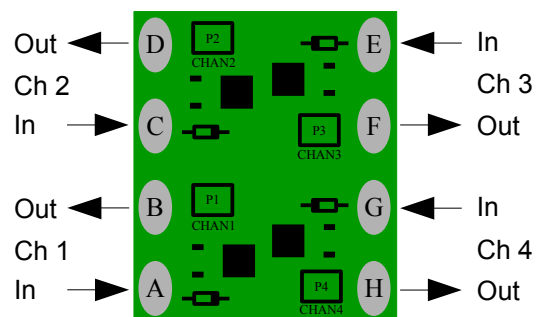
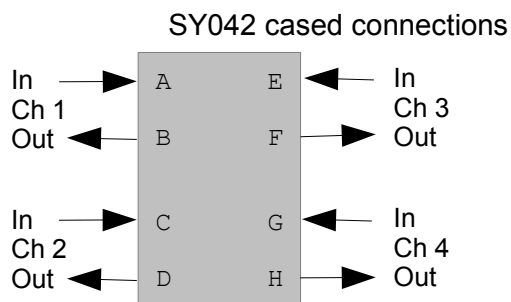
The SY042 is designed to limit the maximum current in a 0-20mA or 4-20mA loop. The SY042 is powered by the current loop, so installation couldn't be simpler. The current limit is factory preset to 24mA, but fine adjustment with a multi turn potentiometer for each channel, is accessible by flipping off the side cover with the connections label. By connecting loop voltage + to a limiter input and a current meter between the output and loop voltage -, you can trim the current limit between 13mA – 24mA.

Specifications

Parameter	Min	Typ	Max
Loop voltage (DC)	3.5		35
Current limit adjustment	13mA		24mA
Supply voltage sensitivity		1uA / V	
Response time (0 to short circuit)		0.15msec	
Operating temp. (C)	-20		60
Storage temperature (C)	-65		125
EMC	Tested to BS EN 61000-4-21:2011		
Case	H (on rail) = 72.5mm, W = 18mm, D = 62mm. Moulded in grey flame resistant polyamide. For use with rails to EN50035 (DIN46277-1) asymmetric or EN50022 (DIN46277-3) symmetric.		
Connections	Rising Clamp terminals with 3.5 x 2.5mm apertures		

Connections

Only 2 terminals are used for each limiter, current in current out. The unit can be wired into the current path at any point in the system.

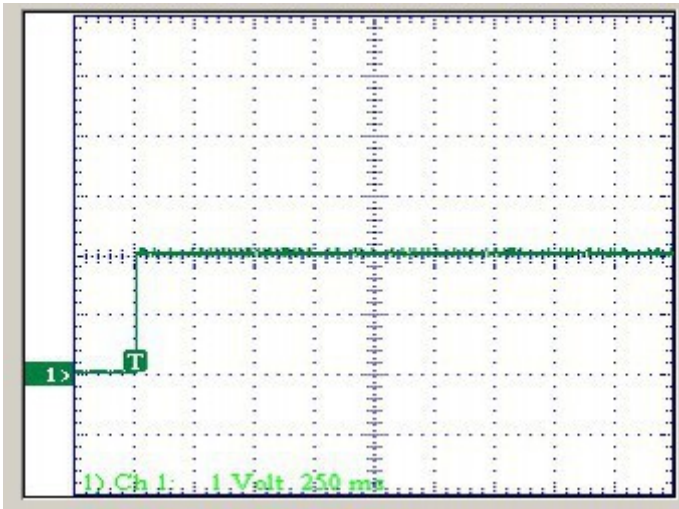


PCB Connections

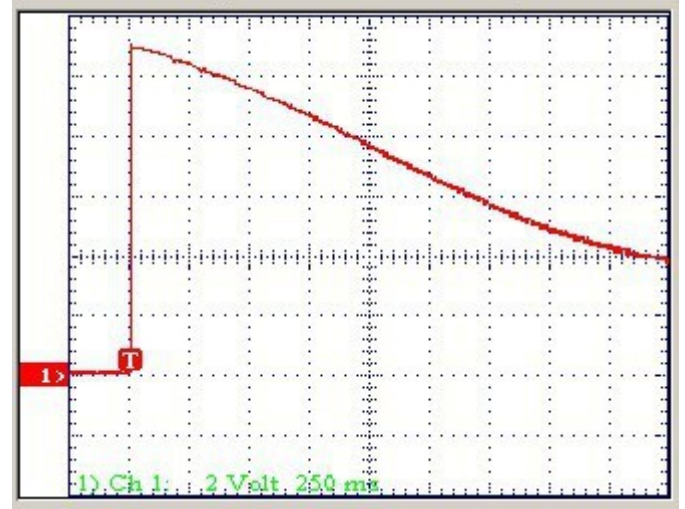
Performance

Each solid state limiter provides a fast, clean cut limit to the current passing through it, as illustrated in the captured scope traces.

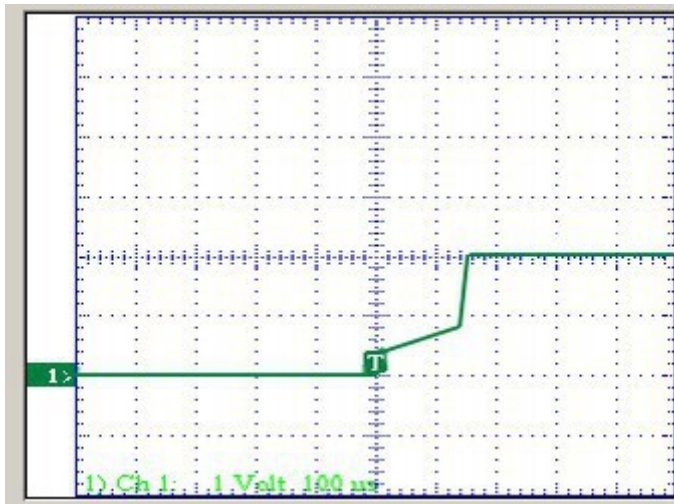
Trace A



Trace B



Trace C



Trace A plots the output current from an SY042 set for 20mA limit. Scaling is 10mA per division. Trace B shows the limited protection provided by a 50mA resettable fuse, the lowest value currently available. Scaling is 40mA per division, after 2 seconds it is still passing 80mA. Trace C is a close up of the rising edge from trace A. The timebase is 100usec/div showing the limit being reached in 150usec with no overshoot.

Part number description

<u>Part code</u>	<u>Description</u>
SY042/1	SY042 issue 1 all 4 channels fitted
SY042/1-D3	SY042 issue 1 Channels 1,2 & 3 fitted
SY042/1-D2	SY042 issue 1 Channels 1 & 2 fitted
SY042/1-D1	SY042 issue 1 Channel 1 fitted

Note: The factory default current limit setting is 24mA. The value is adjustable using an internal trimmer for each channel. Other values, can be factory pre-set if noted with the order.