

# Hall Effect Current Sensors L31S\*\*\*S05FS Series



## Features:

- Open Loop type
- Panel mounting
- Unipolar power supply
- Ferrite core
- Sulfur tolerant sensors (Resistors:Gold internal Electrodes)
- Insulated plastic case according to UL94V0
- UL Recognition

## Advantage:

- Excellent accuracy and linearity
- Wide nominal current range
- Low temperature drift
- Wide frequency bandwidth
- No insertion loss
- High Immunity To External Interference
- Optimised response time
- Current overload capability

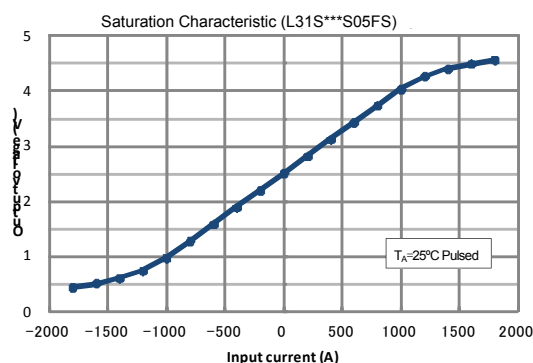
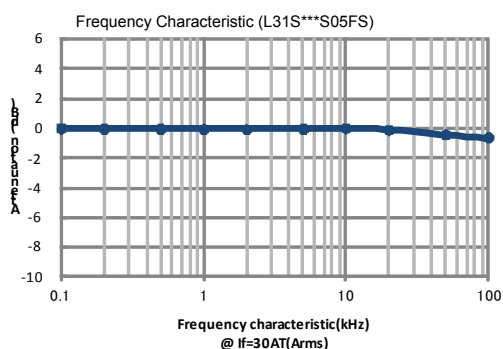
## Specifications

 $T_A=25^{\circ}\text{C}$ ,  $V_{CC}=+5\text{V}$ ,  $R_L=10\text{k}\Omega$ 

Parameters	Symbol	L31S050S05FS	L31S100S05FS	L31S200S05FS	L31S300S05FS	L31S400S05FS	L31S500S05FS	L31S600S05FS
Primary nominal current	I <sub>f</sub>	50A	100A	200A	300A	400A	500A	600A
Saturation current	I <sub>fmax</sub>	≥ ±150A	≥ ±300A	≥ ±600A	≥ ±900A	≥ ±900A	≥ ±900A	≥ ±900A
Rated output voltage	V <sub>o</sub>	V <sub>of</sub> +0.625V ± 0.015V (at I <sub>f</sub> )						
Offset voltage <sup>1</sup>	V <sub>of</sub>	V <sub>REF</sub> ± 0.025V (at I <sub>f</sub> = 0A)						
Reference voltage	V <sub>REF</sub>	2.5V ± 0.020V						
Output Linearity <sup>2</sup> ( 0A, 0.5I <sub>f</sub> , I <sub>f</sub> )	ε <sub>L</sub>	≤ ± 0.5% (at I <sub>f</sub> )						
Power supply voltage	V <sub>CC</sub>	+ 5V ±5 %						
Consumption current	I <sub>cc</sub>	≤ 15mA						
Response time <sup>3</sup>	t <sub>r</sub>	≤ 5μs (at di/dt = 100A / μs)						
Thermal drift of gain <sup>4</sup>	TcV <sub>o</sub>	≤ ± 1.5mV/°C						
Thermal drift of offset	TcV <sub>of</sub>	≤ ± 1.0 mV/°C (at I <sub>f</sub> = 0A)			≤ ± 0.3 mV/°C (at I <sub>f</sub> = 0A)			
Thermal drift of reference	TcV <sub>ref</sub>	≤ ± 0.012% / °C						
Hysteresis error (at I <sub>f</sub> =0A→I <sub>f</sub> →0A)	V <sub>OH</sub>	≤ 10mV			≤ 2.5mV			
Insulation voltage	V <sub>d</sub>	AC3300V for 1minute (sensing current 0.5mA) , inside of through hole ⇔ terminal						
Insulation resistance	R <sub>IS</sub>	≥ 500MΩ (at DC500V) , inside of through hole ⇔ terminal						
Ambient operation temperature	T <sub>A</sub>	-40°C~+85°C						
Ambient storage temperature	T <sub>S</sub>	-40°C~+85°C						

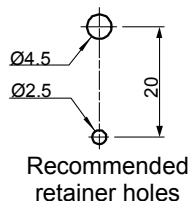
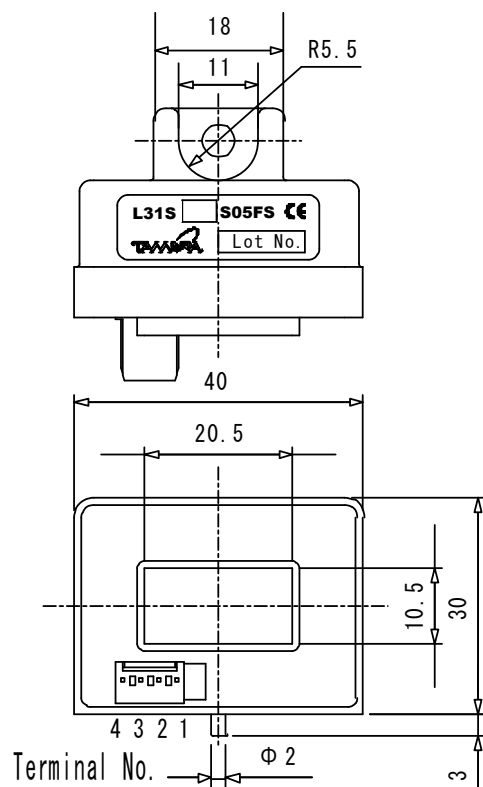
<sup>1</sup> After removal of core hysteresis — <sup>2</sup> Without offset — <sup>3</sup> Time between 10% input current full scale and 90% of sensor output full scale — <sup>4</sup> Without Thermal drift of offset

## Electrical Performances



# Hall Effect Current Sensors L31S\*\*\*S05FS Series

## Mechanical dimensions in mm



### Connector

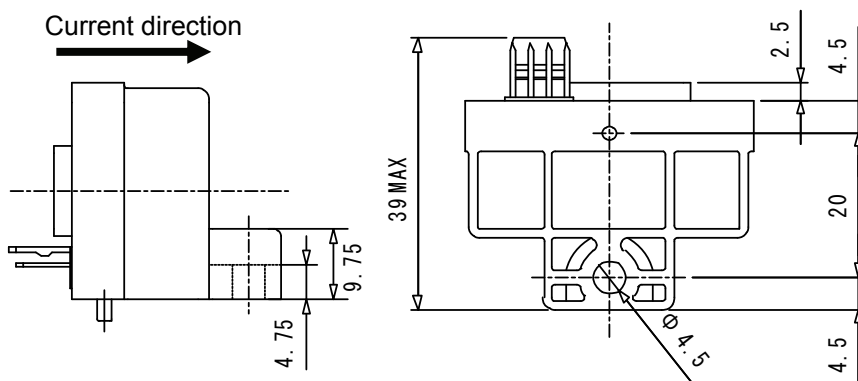
Manufacturer	Part Number	Old Part Number
Molex	22-04-1041	5045-04A

### Terminal Number:

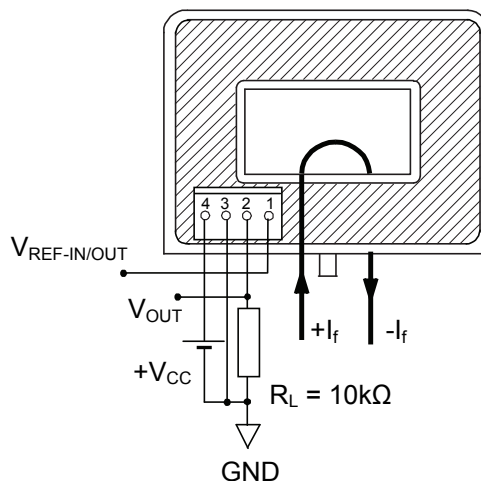
- 1:  $V_{REF\ IN / OUT}$
- 2:  $V_{OUT}$
- 3: GND
- 4:  $+V_{CC} (+5V)$

### NOTES

1. Unit is mm
2. Tolerance is 0.5mm



## Electrical connection diagram



## UL Standard

UL 508 , CSA C22.2 No.14  
(UL FILE No.E243511)

- For use in Pollution Degree 2 Environment.
- Maximum Surrounding air temperature rating, 85°C.

## Package & Weight Information

Weight	Pcs/box	Pcs/carton	Pcs/pallet
37g	20	200	3600

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