

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

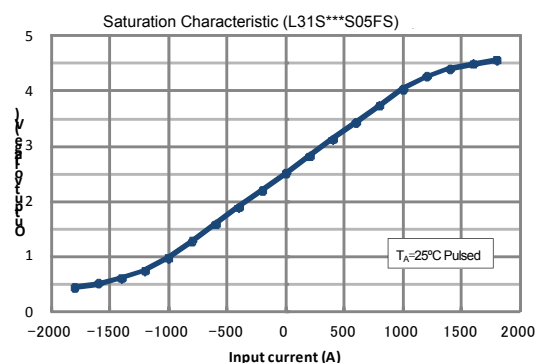
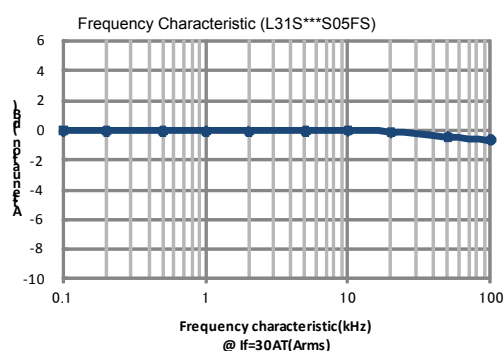
Specifications

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

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

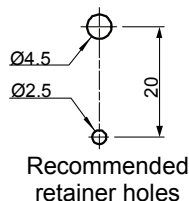
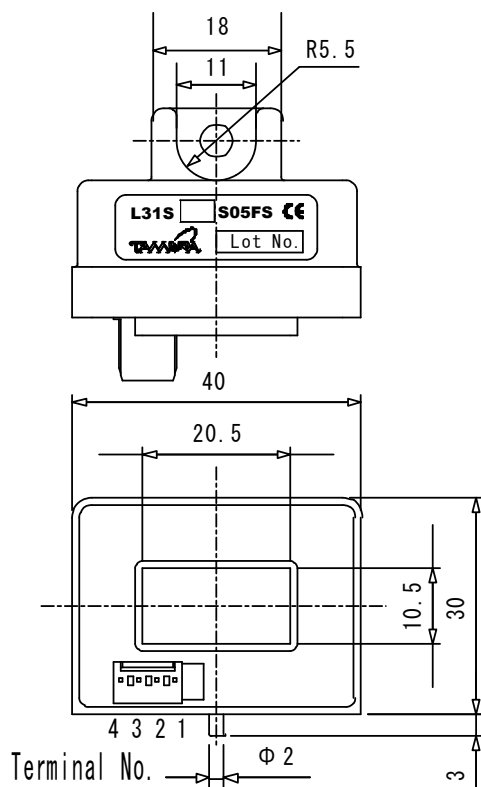
¹ After removal of core hysteresis — ² Without offset — ³ Time between 10% input current full scale and 90% of sensor output full scale — ⁴ Without Thermal drift of offset

Electrical Performances



Hall Effect Current Sensors L31S***S05FS Series

Mechanical dimensions in mm



Connector

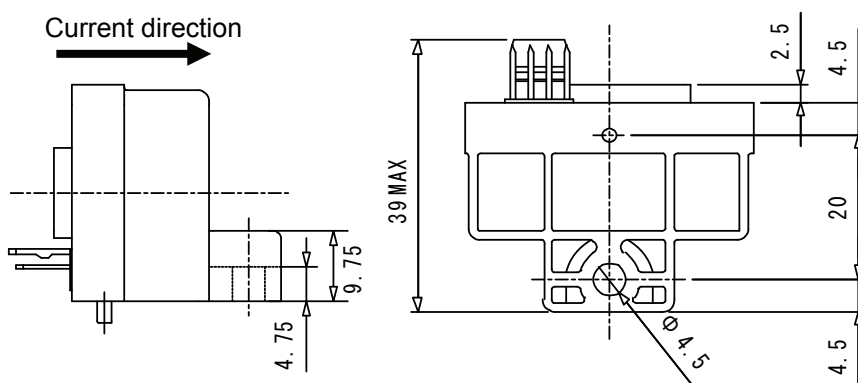
Manufacturer	Part Number	Old Part Number
Molex	22-04-1041	5045-04A

Terminal Number:

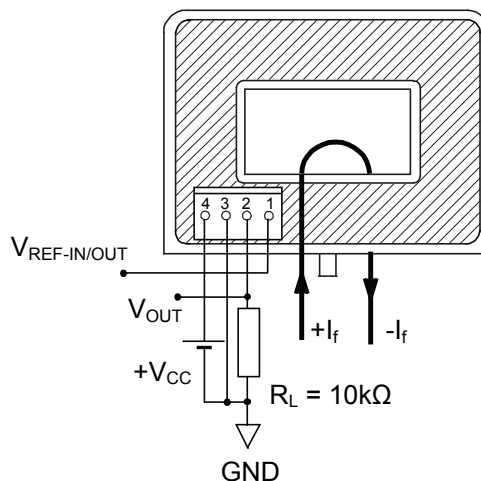
- 1: $V_{REF\ IN / OUT}$
2: V_{OUT}
3: GND
4: $+V_{CC} (+5V)$

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

Mouser Electronics

Authorized Distributor

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Tamura:

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[L31S200S05FS](#)