

Hall Effect Current Sensors L18P***S05 Series



Features:

- Open Loop type
- Printed circuit board mounting
- Integrated primary
- Unipolar power supply
- Busbar version from 40A to 60A
- Insulated plastic case according to UL94V0

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

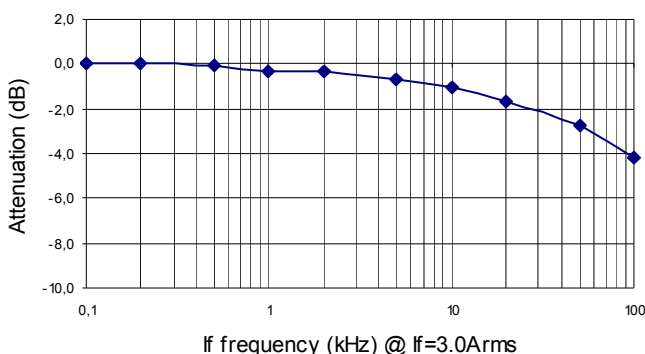
$T_A=25^\circ\text{C}$, $V_{CC}=+5\text{V}$, $R_L=10\text{k}\Omega$

Parameters	Symbol	L18P003 S05	L18P005 S05	L18P010 S05	L18P015 S05	L18P020 S05	L18P025 S05	L18P030 S05	L18P040 S05	L18P050 S05	L18P060 S05
Rated current	I_f	3A	5A	10A	15A	20A	25A	30A	40A	50A	60A
Maximum Current	I_{fmax}	$I_f \times 1.25$									
Output Voltage	V_{OUT}	$V_{OE} + 1.5\text{V} \pm 0.045\text{V} @ \pm I_f$									
Offset Voltage ¹	V_{OE}	$V_{REF} \pm 0.035\text{V} @ I_f = 0\text{A}$									
Accuracy ² @ I_f	X	$\pm 1\%$									
Output Linearity	ϵ_L	$\leq \pm 1\% @ I_f$									
Power Supply	V_{CC}	$+5\text{V} \pm 5\%$									
Consumption Current	I_C	$\leq 15\text{mA}$									
Response Time ³	t_r	$\leq 5\mu\text{s} (@ di/dt = 50\text{A} / \mu\text{s})$									
Output Temperature Characteristic ²	TCV_{OUT}	$\leq \pm 2.0\text{mV}/^\circ\text{C}$									
Offset Temperature Characteristic	TCV_{OE}	$\leq \pm 1.5\text{mV}/^\circ\text{C}$									
Hysteresis error	V_{OH}	$\leq 25\text{mV} (0\text{A} \leftrightarrow I_f)$									
Withstand Voltage	V_d	AC3000V for 1minute (sensing current 0.5mA), inside of through hole \leftrightarrow terminal									
Insulation Resistance	R_{IS}	$> 500\text{M}\Omega$ (500V DC), inside of through hole \leftrightarrow terminal									
Frequency Bandwidth ⁴	f	DC .. 50kHz									
Operating Temperature	T_A	$-20^\circ\text{C} \sim +85^\circ\text{C}$									
Storage Temperature	T_S	$-20^\circ\text{C} \sim +85^\circ\text{C}$									

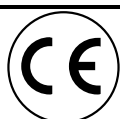
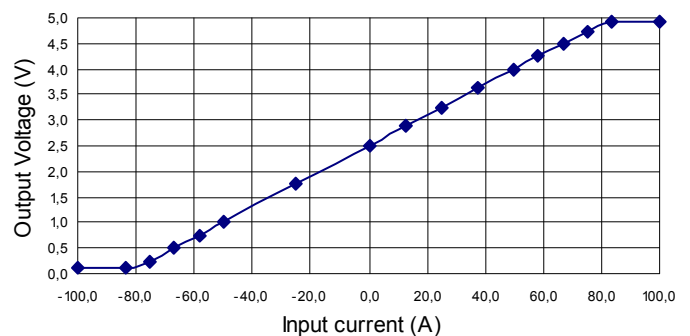
¹ $V_{REF} = V_{CC} / 2$ (ratiometric) — ² Without offset — ³ Time between 10% input current full scale and 90% of sensor output full scale — ⁴ Small signal only to avoid excessive heating of magnetic core

Electrical Performances

Frequency Characteristic (L18P003S05)



Saturation Characteristic (L18P050S05)



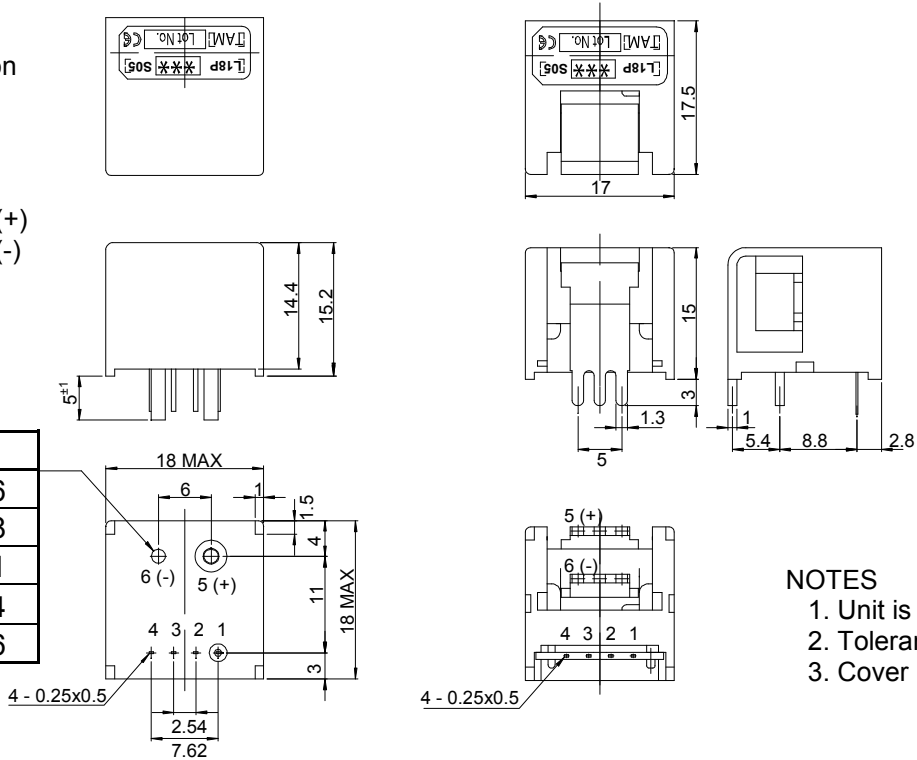
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Mechanical dimensions in mm

Terminal Pin Identification

- 1: GND
- 2: GND
- 3: +V_{CC}
- 4: Output
- 5: Primary input current (+)
- 6: Primary input current (-)

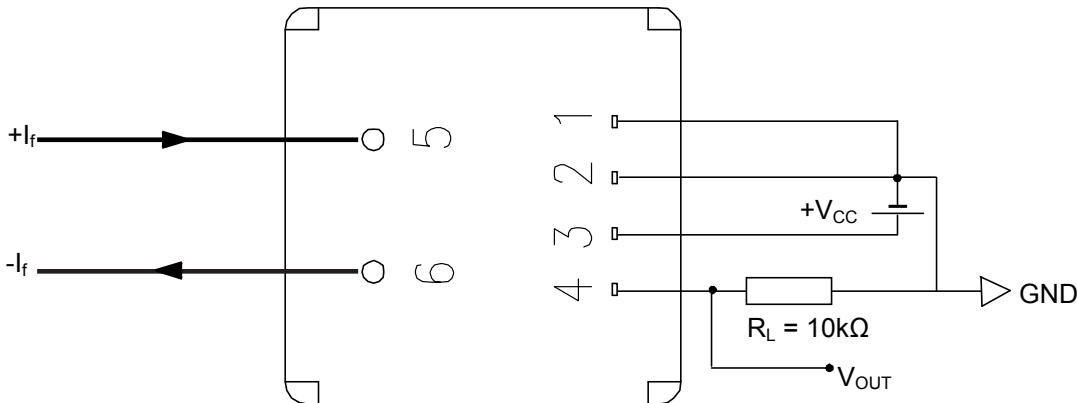
A	φD
3A	φ0.6
5A	φ0.8
10A	φ1.1
15A	φ1.4
20A~30A	φ1.6



NOTES

- 1. Unit is mm
- 2. Tolerance is 0.5mm
- 3. Cover is optional

Electrical connection diagram



Package & Weight Information

Weight	Pcs/box	Pcs/carton	Pcs/pallet
8g	100	600	9600

