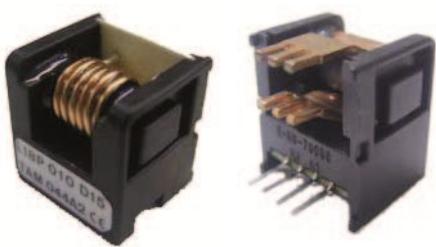


Hall Effect Current Sensors L18P***S05R Series



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
- Regulated offset voltage

Advantages:

- 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

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

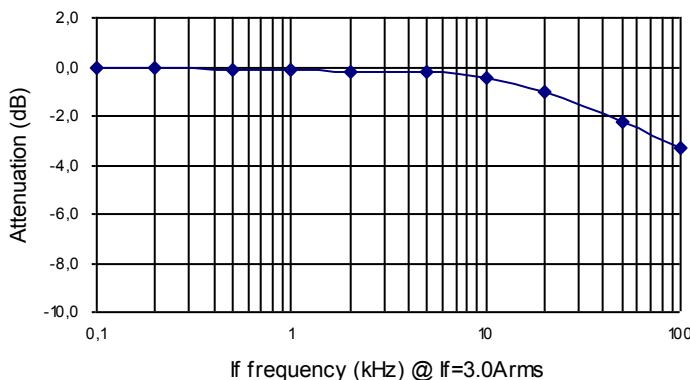
| Parameters | Symbol | L18P003S05R | L18P005S05R | L18P010S05R | L18P015S05R | L18P020S05R | L18P025S05R | L18P030S05R | L18P040S05R | L18P050S05R | L18P060S05R |
|------------------------------------------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------------------------------------------------------------------------------|
| Rated current | I_f | 3A | 5A | 10A | 15A | 20A | 25A | 30A | 40A | 50A | 60A |
| Maximum Current | $I_{f\max}$ | | | | | | | | | | $I_f \times 3$ |
| Output Voltage | V_{OUT} | | | | | | | | | | $V_{OE} \pm 0.625\text{V} \pm 0.045\text{V} @ \pm I_f$ |
| Offset Voltage ¹ | V_{OE} | | | | | | | | | | $2.5\text{V} \pm 0.035\text{V} @ I_f = 0\text{A}$ |
| 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 | | | | | | | | | | $\leq 5\mu\text{s} (@ dI/dt = I_f / \mu\text{s})$ |
| Output Temperature Characteristic ² | TCV_{OUT} | | | | | | | | | | $\leq \pm 2.0\text{mV}/^\circ\text{C}$ |
| Offset Temperature Characteristic | TCV_{OE} | | | | | | | | | | $\leq \pm 2.0\text{mV}/^\circ\text{C}$ |
| Hysteresis error | V_{OH} | | | | | | | | | | $\leq 25\text{mV} (0\text{A} \Leftrightarrow I_f)$ |
| Withstand Voltage | V_d | | | | | | | | | | AC 3000V for 1minute (sensing current 0.5mA), primary pin \Leftrightarrow secondary pin |
| Insulation Resistance | R_{IS} | | | | | | | | | | $> 500\text{M}\Omega$ (500V DC), primary pin \Leftrightarrow secondary pin |
| Frequency Bandwidth ⁴ | f | | | | | | | | | | DC .. 50kHz |
| Operating Temperature | T_A | | | | | | | | | | $-10^\circ\text{C} \sim +80^\circ\text{C}$ |
| Storage Temperature | T_s | | | | | | | | | | $-20^\circ\text{C} \sim +85^\circ\text{C}$ |

¹ V_{OE} is fixed (independent of V_{CC}) — ² Without offset — ³ Time between 10% input current full scale and 90% of sensor output full scale —

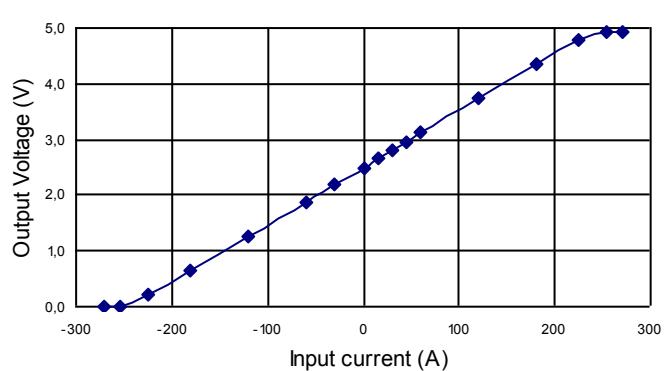
⁴ Small signal only to avoid excessive heating of magnetic core

Electrical Performances

Frequency Characteristic (L18P060S05R)



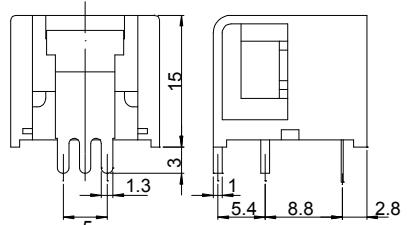
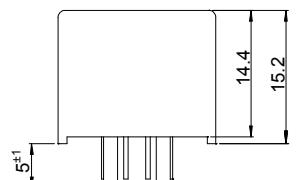
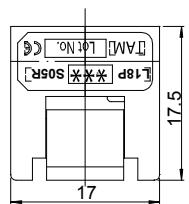
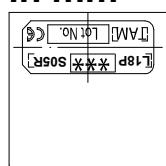
Saturation Characteristic (L18P060S05R)



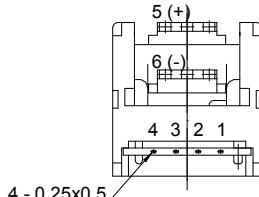
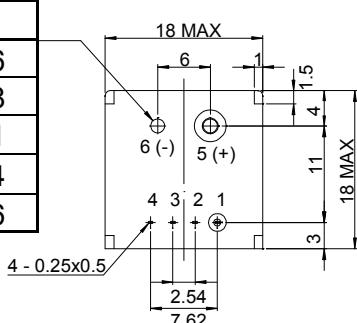
Mechanical dimensions in mm

Terminal Pin Identification

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



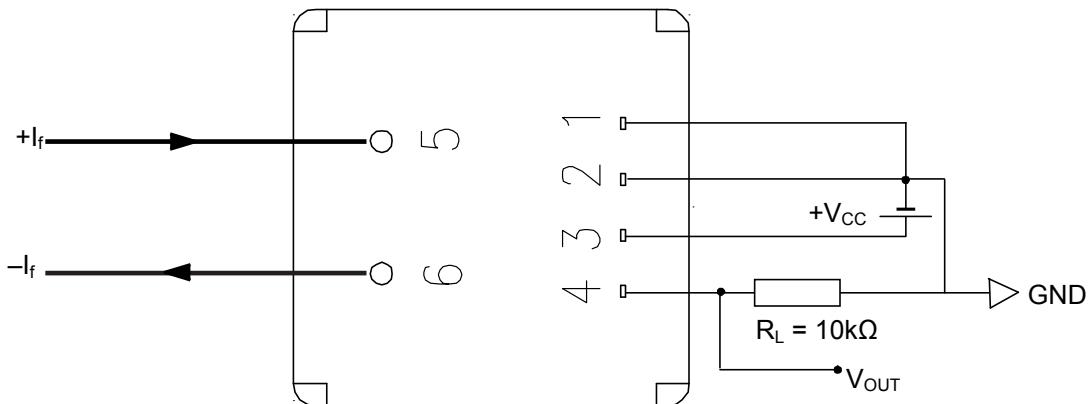
| | |
|---------|------------|
| A | ϕD |
| 3A | $\phi 0.6$ |
| 5A | $\phi 0.8$ |
| 10A | $\phi 1.1$ |
| 15A | $\phi 1.4$ |
| 20A~30A | $\phi 1.6$ |



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 |

