Line/Load Inductor Installation, Operation, and Maintenance Manual

Allient | TCI
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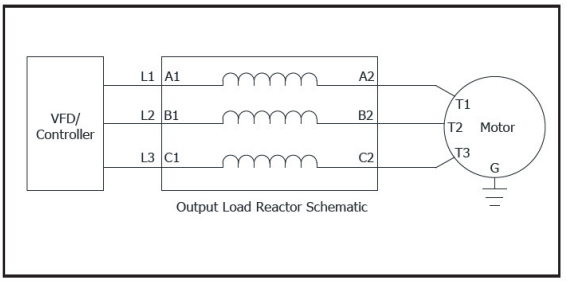
Installation Instructions

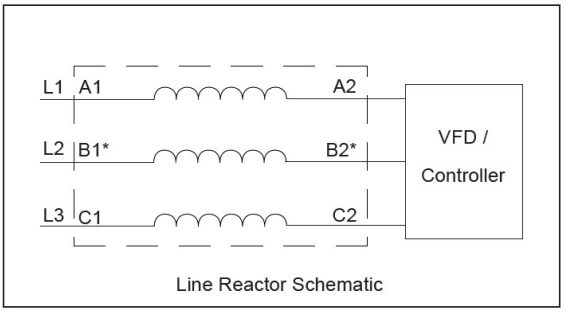
When installing the Line/Load Inductor on the Input/Output side of the Variable Frequency Drive (VFD), please use the following guidelines when wiring the unit:

- The Line/Load Inductor is a 3-phase device and should be wired in series and positioned on the input or output side of the VFD.
- All Terminal Block connectors will be marked, either on the terminal block or on the inductor nameplate label. A1, B1, and C1 are the input terminals where the 3 phases of incoming power are to be wired. As a result, A2, B2, and C2 are the output terminals. Units with copper bus or ring lug terminals are not marked. In these cases, either the upper terminals or lower terminals can be used as the input terminals if the selection is consistent. Please see website for terminal drawings: http://www.transcoil.com/Products/KDR-Line-Inductor.htm

Field Wiring Diagrams



Output Load Reactor Schematic



Line Reactor Schematic

*For single-phase applications, use coils A and C. Isolate terminals B1 and B2.

Power Wiring

Only use 75°C copper conductors unless the wire connector is marked for Al/Cu, then the use of aluminum wire is permitted.

TCI recommends that these inductors be wired and located as close to the VFD as possible to have the greatest success in protecting sensitive equipment.

In standard 40°C ambient or less installations, a clearance of 3 inches on all sides of the inductors and its enclosure is recommended for assisting in heat dissipation and ample wire bending space. This is a general guideline for typical applications. If the inductor is being installed next to a heat sensitive instrument or control device, we recommend reviewing specific requirements or heat limitations. Line inductor heat loss information is available on the TCI website. This inductor should only be installed and wired by personnel trained and familiar with local codes, NEC Article 110, and/or UL 508A.

Single-phase applications are acceptable; however, it is important to size the unit based on the single-phase Full Load Amperage of the VFD. The input and output connections should be on terminals A and C to ensure proper performance.

These inductors are designed to be floor-mounted or wall-mounted. Large open-style devices should be panel mounted by incorporating a bracket that would act as a shelf to support the inductor and/or enclosure. When installing an open style device in an existing enclosure, the inductor should be mounted in the lower half of the cabinet to prevent hot spots or pockets of heat. Inductors with ducts are designed to be mounted vertically for proper cooling and maximum air flow.

Grounding
Open and enclosed inductors must be grounded. Open inductors must be grounded at the grounding terminal, or inductor mounting holes if no designated grounding terminal is provided. Enclosed inductors must be grounded on the provided grounding stud.

Product Specifications
- 3-Phase, 690/600 Volt Class as marked
- UL Listed (cULus) or UL Recognized (cURus) as marked
- CE Marked
- Current-rated device

- 200% rated current for 3 minutes/hour
- Max Ambient Temperature: 40°/50°C as marked

For more information on TCI line/load inductors, including drawings and schematics, visit: https://transcoil.com/products/kdr-line-inductor/

For product support, please contact our technical support team at 800-824-8282.

DIN Rail Kits (Full listing available at transcoil.com)	
Inductor Part Number	DIN Rail Kit
KDRMAxxxxxxx	DR01
KDRAAxxxxxxx	DR02
KDRAxxxxxxx	DR02
KDRBxxxxxxx	DR02
Warning	
	Disconnect all power before working on the equipment. Do no attempt any work on a powered inductor.
	The Inductor, VFD, motor, and other connected equipment must be properly grounded.
	The VFD terminals and connected cables are at a dangerously high voltage when power is applied to the VFD, regardless of motor operation.
	All electrical connections must be re-torqued annually.

Item ID	Conductor Range	Bolt/ Stud Size	Hex Size	Tightening Torque
Table AU-800				
*AU-800 Certified *UL 486S/B Listed *UL File E6207				
AU-800	800kcmil-300kcmil	½	½	500 in-lb (56.5 N-m)
Table T3A2-600N				
*T3A2-600N *UL 486A/B Listed, UL File E6207 *Must be mounted with a minimum of 2 bolts				
T3A2-600N	600kcmil-2AWG	½	1/2	500 lb-in (56.5 N-m)
Table T4A4-600N				
*T4A4-600N *UL 486A/B Listed, UL File E6207 *Must be mounted with a minimum of 4 bolts				
T4A4-800N	800kcmil-300kcmil	1/2	1/2	500 lb-in (56.5 N-m)
Table T4A4-800N				
*T4A4-800N *UL File 486A/B Listed, UL File E6207 *Must be mounted with a minimum of 4 bolts				
T4A4-800N	800kcmil-300kcmil	1/2	1/2	500 in-lb (56.5 N-m)
Table 600T-4				
600T-4	600MCM-2AWG	3/8	3/8	550 in-lb (62.2 N-m)
Table 800T-4				
800T-4	800MCM-300MCM	3/8	1/2	500 in-lb (56.5 N-m)
Table 3-600T				
3-600T	600MCM-2AWG	1/2	3/8	500 in-lb (56.5 N-m)

Wire Size Copper (Solid to semi-rigid stranded and metric mm^2, ##)	Rating C	Wire Size FLEX Copper (#)	Wire Size Aluminum	Torque (All Drive Means)
Table S600 IHI Connectors				
600kcmil-4	90	444-2	600-4	500 in-lb (56.5 N-m)
Table 2S350 IHI Connectors				
350kcmil-2	90	262-2	350-2	375 in-lb (42.4 N-m)
(1), (2) 25-16 mm^2 (1) 35 mm^2	90	2-4	2-6	275 in-lb (31.1 N-m)
Table 2S600 IHI Connectors				
600kcmil-4	90	44-2	600-4	500 in-lb (56.5 N-m)
UL Listed 84JM ZMVV E129884		(#) FLEX-covers stranding classes within G, H, I/DLO, Metric class 5 and k/MTW, (##); Mm2 sizes within AWG/kcmil ranges are included.		
Table W2/0 IHI Connectors				
N/A	90	1/0-1	N/A	75 in-lb (8.5 N-m)
N/A	90	1-4	N/A	55 in-lb (6.2 N-m)
2/0-3	90	4-8	2/0-3	50 in-lb (5.6 N-m)
4-6	90	8-10	4-6	45 in-lb (5.1 N-m)
8	90	10-14	8	40 in-lb (4.5 N-m)
10-14	90	N/A	10-12	35 in-lb (4.0 N-m)
Table S250 IHI Connectors				
250kcmil-2	90	3/0-2AWG 70-50mm^2	250-2	375 in-lb (42.4 N-m)
(1), (2) 25-16 mm^2 (1) 35mm^2	90	2-6AWG 35-16mm^2	2-6	275 in-lb (31.1 N-m)

Inductor Lug Kits

Follow NEC guidelines to determine acceptable wire ampacity requirements.

Lug Kit	Figure Number	Lug Wire Range	For Lug Torque, See Table:	Bolt Assembly Torque	Lug on Inductor Drawings: (See Website)
SLK10	1	2/0-14AWG	S2/0	66 in-lb (7.5 N-m)	LK10-DWG
SLK11	1	250MCM-6AWG	S250	135 in-lb (15.3 N-m)	LK11-DWG
SLK12	1	600MCM-AWG	S600	200 in-lb (22.6 N-m)	LK12-DWG
SLK13	3	(2) 350MCM-6AWG	2S350	450 in-lb (50.8 N-m)	LK13-DWG
SLK14	3	(2) 600MCM-4AWG	2S600	450 in-lb (50.8 N-m)	LK14-DWG
SLK15	3	(2) 800MCM-300MCM	AU-800	450 in-lb (50.8 N-m)	LK15-DWG
SLK16	4	(3) 600MCM-2AWG	T3A2-600N	450 in-lb (50.8 N-m)	LK16-DWG
SLK17	5	(4) 600MCM-2AWG	T4A4-600N	450 in-lb (50.8 N-m)	LK17-DWG
SLK18	5	(4) 800MCM-300MCM	T4A4-800N	450 in-lb (50.8 N-m)	LK18-DWG
SLK21	1	250MCM-6AWG	S250	66 in-lb (50.8 N-m)	LK21-DWG
SLK17-BB	5	(4) 600MCM-2AWG	T4A4-600N	450 in-lb (50.8 N-m)	LK17-bb-DWG
SLK18-BB	5	(4) 800MCM-300MCM	T4A4-800N	450 in-lb (50.8 N-m)	LK18-bb-DWG
SLK11-1	1	250MCM-6AWG	S250	135 in-lb (15 N-m)	LK11-1DWG
SLK16-1	4	(3) 600MCM-2AWG	T3A2-600N	450 in-lb (51 N-m)	LK16-1DWG
SLK19	5	(4) 800MCM-300MCM	T4A-800N	450 in-lb (51 N-m)	LK19-DWG
SLK20	3	(2) 800MCM-300MCM	AU-800	450 in-lb (51 N-m)	LK20-DWG
SLK22	2	(2) 2/0-14AWG	S2/0-HEX	66 in-lb (7.5 N-m)	LK22-DWG
SLK23	6	(4) 600MCM-2AWG	600T-4	200 in-lb (22.6 N-m)	LK23-DWG
SLK24	6	(4) 600MCM-2AWG	600T-4	200 in-lb (22.6 N-m)	LK24-DWG
SLK25	3	(2) 800MCM-300MCM	AU-800	450 in-lb (51 N-m)	LK25-DWG
SLK30	1	2/0-14AWG	S2/0	2S600 / 2S350	LK30-DWG
SLK31	1	2/0-14AWG	S2/0	2S600 / 2S350	LK31-DWG
SLK32	1	250MCM-6AWG / 2/0-14AWG	S250 / S2/0	135 in-lb (15.3 N-m) / 66 in-lb (7.5 N-m)	LK32-DWG
SLK33	3 and 1	(2) 350MCM-6AWG / 2/0-14AWG	2S350 / S2/0	135 in-lb (15.3 N-m) / 66 in-lb (7.5 N-m)	LK33-DWG
SLK34	3 and 1	(2) 350MCM-6AWG / 600MCM-4AWG	2S350 / S600	450 in-lb (51 N-m) / 200 in-lb (22.6 N-m	LK34-DWG
SLK35	3	(2) 600MCM-4AWG / (2) 350MCM-6AWG	2S600 / 2S350	450 in-lb (51 N-m) / 200 in-lb (22.6 N-m)	LK35-DWG
SLK36	4 and 3	(3) 600MCM-2AWG / (2) 350MCM-6AWG	T3A2-600N / 2S350	450 in-lb (51 N-m) /450 in-lb (51 N-m)	LK36-DWG
SLK36-1	4 and 3	(3) 600MCM-2AWG / (2) 350MCM-6AWG	T3A2-600N / 2S350	450 in-lb (51 N-m) /200 in-lb (22.6 N-m)	LK36-1DWG
SLK37	4 and 3	(3) 600MCM-2AWG / (2) 350MCM-6AWG	600T-4 / 2S350	200 in-lb (22.6 N-m) /450 in-lb (51 N-m)	LK37-DWG
SLK38	4 and 3	(4) 800MCM-300MCM / (2) 350MCM-6AWG	800T-4 / 2S350	200 in-lb (22.6 N-m) /450 in-lb (51 N-m)	LK38-DWG
SLK39	4 and 3	(3) 600MCM-2AWG / (2) 350MCM-6AWG	3-600T / 2S350	450 in-lb (51 N-m) /200 in-lb (22.6 N-m)	LK39-DWG
SLK40	1	2/0-14AWG	S2/0	66 in-lb (7.5 N-m)	LK40-DWG
SLK41	3	2/0-14AWG	2S600 / 2S350	450 in-lb (51 N-m) /450 in-lb (51 N-m)	LK41-DWG
SLK42	1	2/0-14AWG	S2/0	66 in-lb (7.5 N-m)	LK42-DWG

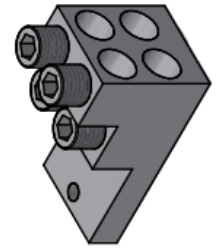
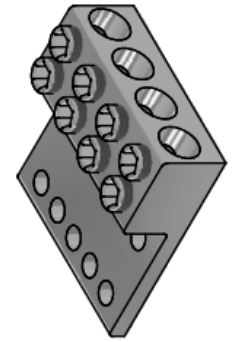


Figure 6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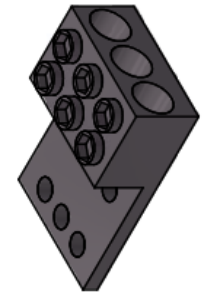
Figure 4

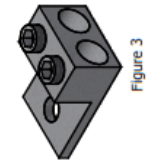
Figure 3


Figure 2


Figure 1

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