

## KDR Reactor Installation Instructions

When installing the KDR Line/Load Reactors on a Variable Frequency Drive (VFD), please use the following guidelines when wiring the unit:

The KDR Line/Load Reactor 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 reactor 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 as long as the selection is consistent. Please see website for terminal drawings:

<http://www.transcoil.com/Products/KDR-Line-Reactor.htm>

**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 reactors 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 reactors and its enclosure is recommended for assisting in heat dissipation and ample wire bending space.

This reactor 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 reactors 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 reactor and/or enclosure. When installing an open style device in an existing enclosure, the reactor should be mounted in the lower half of the cabinet to prevent hot spots or pockets of heat. Reactors with ducts are designed to be mounted vertically for proper cooling and maximum air flow.

**Grounding:** Open and enclosed reactors must be grounded. Open reactors must be grounded at the grounding terminal, or reactor mounting holes if no designated grounding terminal is provided. Enclosed reactors 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) and CSA listed (CSA) as marked
- CE Marked
- Current-rated device
- 200% rated current for 3 minutes
- Ambient Temperature: 40°/50°C as marked

For more information on TCI line/load reactors, including drawings and schematics, visit:

<https://transcoil.com/products/kdr-line-reactor/>

**For product support, please contact our TCI Technical Support Team at 800-824-8282.**

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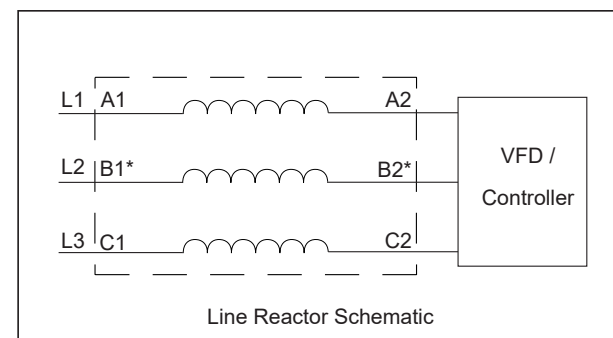
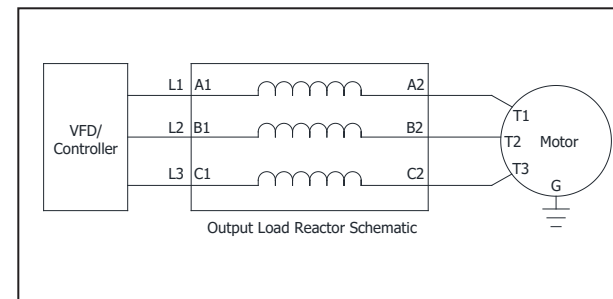


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## KDR Series Line/Load Reactor Installation, Operation, and Maintenance Manual

### Field Wiring Diagrams



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

# KDR Reactor 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 Reactor 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	2	(2) 350MCM-6AWG	2S350	450 in-lb (50.8 N-m)	LK13-DWG
SLK14	2	(2) 600MCM-4AWG	2S600	450 in-lb (50.8 N-m)	LK14-DWG
SLK15	2	(2) 800MCM-300MCM	AU-800	450 in-lb (50.8 N-m)	LK15-DWG
SLK16	3	(3) 600MCM-2AWG	T3A2-600N	450 in-lb (50.8 N-m)	LK16-DWG
SLK17	4	(4) 600MCM-2AWG	T4A4-600N	450 in-lb (50.8 N-m)	LK17-DWG
SLK18	4	(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

Wire Size copper (Solid to semi-rigid stranded and metric mm <sup>2</sup> , ##)	Rating C	Wire Size FLEX Copper (#)	Wire Size Aluminum	Torque (All Drive Means)
<b>Table S2/0 IHI Connectors</b>				
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		40 in-lb (4.5 N-m)
10-14	90	N/A	10-12	35 in-lb (4.0 N-m)
<b>Table S250 IHI Connectors</b>				
250kcmil-2	90	3/0-2AWG 70-50mm <sup>2</sup>	250-2	375 in-lb (42.4 N-m)
(1),(2) 25-16 mm <sup>2</sup> (1) 35mm <sup>2</sup>	90	2-6AWG 35-16mm <sup>2</sup>	2-6	275 in-lb (31.1 N-m)

Wire Size copper (Solid to semi-rigid stranded and metric mm <sup>2</sup> , ##)	Rating C	Wire Size FLEX Copper (#)	Wire Size Aluminum	Torque (All Drive Means)
<b>Table S600 IHI Connectors</b>				
600kcmil-4	90	444-2	600-4	500 in-lb (56.5 N-m)
<b>Table 2S350 IHI Connectors</b>				
350kcmil-2	90	262-2	350-2	375 in-lb (42.4 N-m)
(1),(2) 25-16 mm <sup>2</sup> (1) 35mm <sup>2</sup>	90	2-4	2-6	275 in-lb (31.1 N-m)
<b>Table 2S600 IHI Connectors</b>				
600kcmil-4	90	44-2	600-4	500 in-lb (56.5 N-m)
CSA, 200116 UL Listed 84JM ZMVV E129884			(# FLEX-covers stranding classes within G, H, I/DLO, Metric clas 5 and K/MTW, (##) mm <sup>2</sup> sizes within AWG/kcmil ranges are included.	

Item ID	Conductor Range	Bolt/Stud Size	Hex Size	Tightening Torque
<b>Table AU-800</b>				
*AU-800 Certified *CSA Certified *UL 486S/B Listed, UL File E6207				
AU-800	800kcmil-300kcmil	1/2	1/2	500 in-lb (56.5 N-m)
<b>Table T3A2-600N</b>				
*T3A2-600N *CSA Certified *UL 486A/B Listed, UL File E6207 *Must be mounted with a minimum of 2 bolts				
T3A2-600N	600kcmil-2AWG	1/2	3/8	375 in-lb (42.4 N-m)
<b>Table T4A4-600N</b>				
*T4A4-600N *CSA Certified *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 in-lb (56.5 N-m)
<b>Table T4A4-800N</b>				
*T4A4-800N *CSA Certified *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 in-lb (56.5 N-m)

DIN Rail Kits	
Reactor Part Number	DIN Rail Kit
KDRMAxxxxxxx	DR01
KDRAAxxxxxxx	DR02
KDRAxxxxxxx	DR02
KDRBxxxxxxx	DR02
<i>Full listing available at transcoil.com</i>	

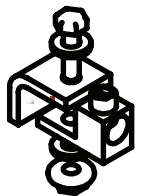


Figure 1

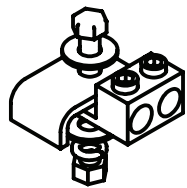


Figure 2

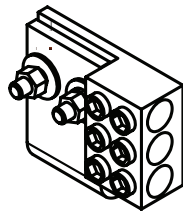


Figure 3

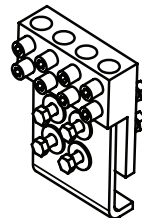


Figure 4

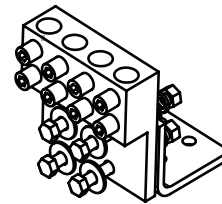


Figure 5

Warning	Disconnect All power before working on the equipment. Do not attempt any work on a powered reactor.
	The reactor, 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.