TECHTOP

GENERAL PURPOSE VECTOR CONTROL DRIVES

TOPDRIVE SERIES

2022 / 2023

TD20 | TD350

All Topdrive Series VFDs
Come Standard With a

2-YEAR WARRANTY

or a

3-YEAR WARRANTY

When Purchased With
a Techtop Motor.

TECHTOP

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COMPARISON CHART

MODEL		TD20 p.4-9	TD350 p.10-15
Voltage & Capacity		1Ø 115V: 0.50~1.5HP 1Ø 230V: 0.50~3HP 3Ø 230V: 0.50~3HP 3Ø 460V: 1~3HP	3Ø 230V: 1~75HP 3Ø 460V: 1~150HP 3Ø 575V: 1~150HP
Control Method	**V/F Control**	Yes	Yes
	Sensorless Vector Control	Yes	Yes
	Vector Control	-	Yes (with encoder feedback)
Input Terminal	**Multifunction Terminal**	4 Inputs (S1~S4)	4 Inputs (S1~S4)
	High Speed Pulse Input	1 Input (HDI)	2 Inputs (HDIA, HDIB)
	Analog Input (Current)	2 Inputs (0~10V, -10~+10V or 0~20mA)	1 Input (0~10V or 0~20mA) 1 Input (-10~+10V)
	Analog Input (Voltage)		
	STO (Safety Torque Off)	"-EU" Models Only, SIL3	Yes, SIL2
Output Terminal	**Relay Output**	2 Outputs	2 Outputs
	Open Collector Output	1 Y terminal ON-OFF Output	1 Y terminal ON-OFF Output
	Analog Output	2 Outputs (0~10V or 0~20mA)	1 Output (0~10V or 0~20mA)
	High Speed Pulse Output	-	1 Output (HDO)
Enclosure Class		IP20 (NEMA 1/IP21 Kit Optional)	IP20 (NEMA 1/IP21 Kit Optional)
Keypad		LED 7-segment	LCD Graphic Display
Remote Cable		2m, 3m, 5m, 10m (200m max)	2m, 3m, 5m, 10m (200m max)
Brake Unit		Built-in	Built-in (1~20HP) 220V Built-in (2~40HP) 460V Built-in (1~25HP) 575V External option for all other ratings
EMC Filter		-	Built-in C3
Communications		Modbus RTU/RS485 built-in (standard)	Modbus RTU/RS485 built-in (standard) Ethernet/IP, Profibus-DP, CANopen, Profinet, EtherCAT (option)
Cooling System		Forced air cooling by fan	
Free Software		Topdrive Workshop (available at www.techtopcanada.com)	
Ambient Temperature		-10~50°C, if above 40°C, de-rate 1% for every additional 1°C	
Ambient Humidity		Relative humidity 95% RH or below (without any dew formation)	
Storage Temperature		-20°C~65°C	
Surrounding Environment		Non-corrosive gas, flammable gas, oil residue and dust in a indoor environment	
Altitude		1,000m above sea level (From 1,000m or more, voltage/output current derating by 1% for every 100m elevation; up to 4,000m)	

TECHTOP

AC DRIVES

LOW VOLTAGE VARIABLE FREQUENCY DRIVES

TD20 | TD350

0.50 - 3HP, 115V, 230V OR 460V, SINGLE OR THREE PHASE, IP20

TD20 SERIES

VECTOR CONTROL
MICRO DRIVES

Product Overview

Topdrive20 series is a micro type general vector inverter, specifically designed as a high performance mini VFD used in the small power market, using the leading international vector control algorithm with excellent product features. Topdrive20 series is compatibile with wall and rail installation by utilizing a smaller, compact, efficient design. Topdrive20 series is widely used in textile machinery, food machinery, printing/packaging, fans and pumps, ceramic equipment, wood working equipment, conveying equipment, etc.

POWER RANGE

1AC 110-120V: **120V**	**0.5 - 1.5HP**
1AC 200-240V: **220V**	**0.5 - 3HP**
3AC 200-240V: **220V**	**0.5 - 3HP**
3AC 380-480V: **460V**	**1 - 3HP**
50/60Hz	Allowed range: 47 ~ 63Hz

Standard Features

- V/F (SVPWM) and Sensorless Vector (SVC)
- Asynchronous AC induction motors
- Advanced PID functions
- Mini design for smaller installation space and parallel/side-by-side installations
- High performance LED keypad with digital potentiometer. LED external keypad kit optional.
- Overload capability 200% 1s, 180% 10s, 150% 60s
- Multiple installation modes, wall and rail mount
- Embedded braking transistors
- Removable cooling fan for easy maintenance
- Multiple braking modes
- Continuous running in instant power loss

Operating Parameters

- IP20 standard, NEMA 1/IP21 kits available
- -10~40°C, de-rate 1% for every additional 1°C to 50°C
- Installation up to 1000 MASL (3300 ft.)

Multi-Function & Easy To Use

- Modbus RTU/RS485 built in (standard)
- Simple PLC supporting multiple run modes
- Multiple V/F curve settings
- Motor autotuning modes

Technical Specifications

FUNCTIONS		SPECIFICATIONS
Power Input	Input voltage (V)	AC 1PH 110~120V Rated Voltage: 110V AC 1PH 200~240V Rated Voltage: 220V AC 3PH 200~ 240V Rated Voltage: 220V AC 3PH 380~480V Rated Voltage: 460V
	Input frequency (Hz)	50Hz/60Hz, Allowed range: 47~63Hz
Power Output	Output voltage (V)	0~input voltage error <5%
	Output frequency (Hz)	0~400Hz standard, higher frequencies upon request
Technical Control Features	Control mode	V/F (SVPWM) and SVC
	Motor type	Asynchronous AC induction motors
	Speed ratio	1:100
	Speed control accuracy	±0.2% (SVC)
	Speed fluctuation	±0.3% (SVC)
	Torque response	(SVC)
	Torque control accuracy	10% (SVC)
	Starting torque	Asynchronous motor: 0.50Hz/150% (SVC)
	Overload capability	150% of rated current: 1 minute 180% of rated current: 10 seconds 200% of rated current: 1 second
Running Control Features	Frequency Setting	Digital setting, analog setting, pulse frequency setting, multi-step speed running setting, simple PLC setting, PID setting, MODBUS communication setting,
	Auto-adjustment of the voltage	Keep constant voltage automatically with grid voltage transients
	Fault protection	Provides more than 30 fault protection functions: overcurrent, overvoltage, undervoltage, overheating, phase loss and overload, etc.
	Restart after rotating speed tracking	Smooth starting of the rotating motor
Peripheral Interface	Analog input	1 (AI2) 0~10V/0~20mA and 1 (AI3) -10~10V
	Analog output	2 (AO1, AO2) 0~10V/0~20mA
	Digital input	4 common inputs, the maximum frequency: 1kHz 1 high speed input, the maximum frequency: 50kHz
	Digital output	1 Y terminal open collector output
	Safety Function	"-EU" Models Only, STO (Safe Torque OFF), SIL3
	Relay output	2 programmable relay outputs: RO1A NO, RO1B NC, RO1C common terminal RO2A NO, RO2B NC, RO2C common terminal Contactor capacity: 3A/250VAC
Others	Mountable method	Wall and rail mountable
	Temperature of the running environment	-10~50°C, if above 40°C, de-rate 1% for every additional 1°C
	Protective degree	IP20 standard, NEMA 1/IP21 kits available
	Free Software	Topdrive Workshop (available at www.techtopcanada.com)
	Cooling	Air-cooling
	Braking unit	Built-in braking transistors
	Braking resistor	Optional
	EMC filter	External only

Model Designation

TD20 - 1R5G - S2

1 2 3

FUNCTION	NO.	DESCRIPTION	DETAILED CONTENT
Abbreviation	**1**	Product Abbreviation	**TD20**: Topdrive20 series
Power Range	**2**	Power Range	**1R5G**: 1.5kW, G: Constant torque
Voltage Degree	**3**	Voltage Degree	**S1**: AC 1PH 100-120V Rated Voltage: 110V **S2**: AC 1PH 200~240V Rated Voltage: 220V **2**: AC 3PH 200~240V Rated Voltage: 220V **4**: AC 3PH 380~480V Rated Voltage: 460V

Purchasing Data

HEAVY DUTY (HD) CT 150% OL 1MIN					TD20 IP20 VFD		NEMA 1/IP21 KIT	
HP	OUTPUT CURRENT (A)	FRAME SIZE	WEIGHT (LB)	DIMENSIONS WxHxD (mm)	MODEL	LIST PRICE	MODEL	LIST PRICE
AC 110V 1PH Input / AC 220V 3PH Output								
0.5	2.5	2	2.2	80*185*140.5	**TD20-0R4G-S1**	$ 503	**TD20N1KIT-2**	$ 28
1	4.2	2	2.2	80*185*140.5	**TD20-0R7G-S1**	$ 517	**TD20N1KIT-2**	$ 28
1.5	5.8	2	2.2	80*185*140.5	**TD20-1R1G-S1**	$ 670	**TD20N1KIT-2**	$ 28
AC 220V 1PH Input / AC 220V 3PH Output								
0.5	2.5	1	2.0	80*160*123.5	**TD20-0R4G-S2**	$ 454	**TD20N1KIT-1**	$ 21
1	4.2	1	2.0	80*160*123.5	**TD20-0R7G-S2**	$ 468	**TD20N1KIT-1**	$ 21
2	7.5	2	2.6	80*185*140.5	**TD20-1R5G-S2**	$ 607	**TD20N1KIT-2**	$ 28
3	10	2	2.6	80*185*140.5	**TD20-2R2G-S2**	$ 719	**TD20N1KIT-2**	$ 28
AC 220V 3PH Input / AC 220V 3PH Output								
0.5	2.5	2	2.2	80*185*140.5	**TD20-0R4G-2**	$ 524	**TD20N1KIT-2**	$ 28
1	4.2	2	2.2	80*185*140.5	**TD20-0R7G-2**	$ 547	**TD20N1KIT-2**	$ 28
2	7.5	3	6.8	146*256*167	**TD20-1R5G-2-EU**	$ 669	**TD20N1KIT-3**	$ 60
3	10	3	6.8	146*256*167	**TD20-2R2G-2-EU**	$ 689	**TD20N1KIT-3**	$ 60
AC 460V 3PH Input / AC 460V 3PH Output								
1	2.5	2	2.2	80*185*140.5	**TD20-0R7G-4**	$ 610	**TD20N1KIT-2**	$ 28
2	4.2	2	2.2	80*185*140.5	**TD20-1R5G-4**	$ 648	**TD20N1KIT-2**	$ 28
3	5.5	2	2.2	80*185*140.5	**TD20-2R2G-4**	$ 711	**TD20N1KIT-2**	$ 28

Dimensional Drawings IP20

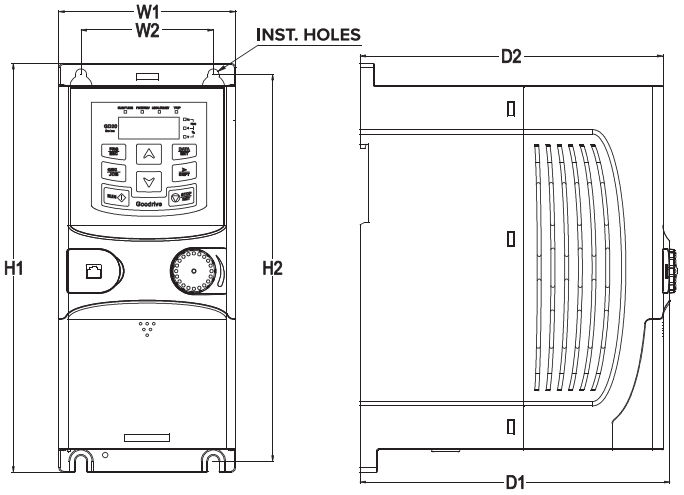


Figure 1 - Wall Mount Frames 1 - 3

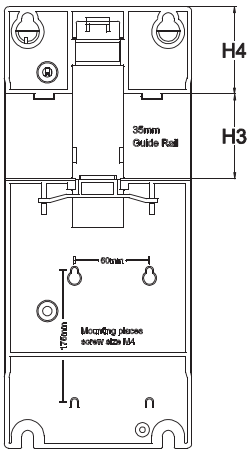
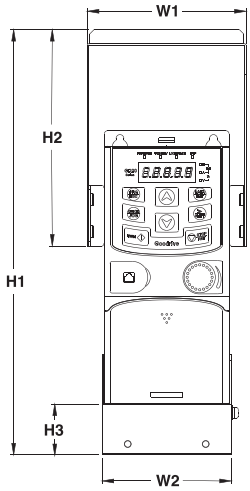


Figure 2 - Din Rail Mount Frames 1 - 2

FRAME	W1	W2	H1	H2	H3	H4	D1	D2	INSTALLATION HOLES
1	80	60	160	150	35.4	36.6	123.5	120.3	4-Ø5
2	80	60	185	175	35.4	36.6	140.5	137.3	4-Ø5
3	146	131	256	243.5	--	--	175	167	4-Ø5

Dimensions are in **mm**

Dimensional Drawings NEMA 1/IP21 Kit



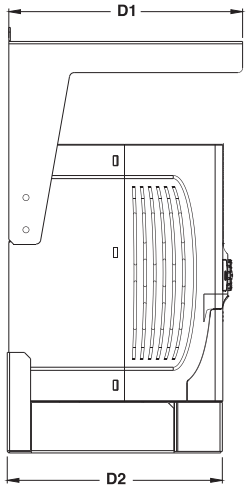


Figure 1 - Wall Mount Frames 1 - 3

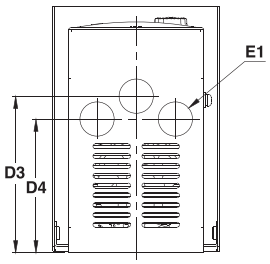
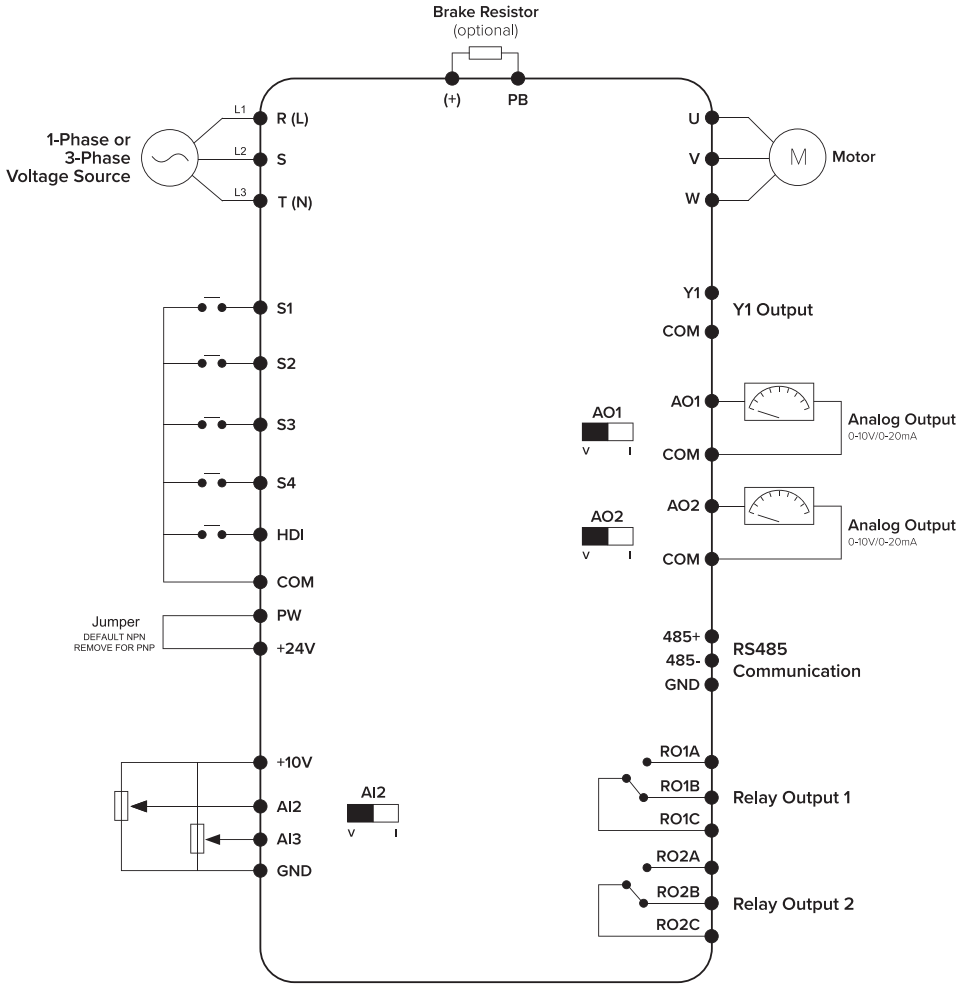


Figure 2 - Junction Box Frames 1 - 3

FRAME	W1	W2	H1	H2	H3	D1	D2	D3	D4	E1
1	102	83	248.5	139	32.5	150	122	90.5	76.5	3-Ø21
2	102	83	273	139	32.5	150	138	96	82	3-Ø21
3	167.5	155.5	451.5	134	60	240	169	128	--	2-Ø35

Dimensions are in **mm**

Control Circuit Wiring Diagram



Terminals

POWER TERMINALS	DESCRIPTION
L, N	Single phase AC input terminals which are generally connected with thwe power supply.
R, S, T (L1, L2, L3)	Three phase AC input terminals which are generally connected with the power supply.
PB, (+)	External dynamic braking resistor terminal.
U, V, W	Three phase AC output terminals which are generally connected to the motor.
PE	Protective grounding terminal.

INPUT/OUTPUT	TYPE	QUANTITY	DESCRIPTION
Input	Digital input	4 (S1-S4)	1kHz, NPN and PNP
	High speed pulse input	1 (HDI)	50kHz, NPN and PNP
	Analog input	2 (AI2-AI3)	0~10V, 0~20mA, -10V~+10V
Output	ON-OFF output	1 (Y1)	Maximum output frequency: 1kHz
	Analog output	2 (AO1-AO2)	0~10V, 0~20mA
	Relay output	2 (RO1-RO2)	3A/250VAC, NO+NC


RUN/TUNE
FWD/REV
LOCAL/REMOT
TRIP
Hz
RPM
A
%
V
PRG
ESC
DATA
ENT
QUICK
JOG
SHIFT
RUN
STOP
RST
WARNING
Risk of electric shock
Read manual before installing.
Wait 10 minutes for capacitor discharge after disconnecting power supply.
Refer to the QR Code for access to the user manual and quick startup guide.
Topdrive20

1 - 150HP, 230V, 460V OR 575V, THREE PHASE, IP20

TD350 SERIES

HIGH PERFORMANCE
MULTI-FUNCTION
CONTROL DRIVES

Product Overview

The Topdrive350 series is a high performance and high precision VFD compatible with asynchronous and permanent magnet synchronous motors. The TD350 series provides wide voltage ranges and several different methods (MODBUS, PROFIBUS-DP, CANopen, and EtherNet/IP) to communicate with the VFD. The TD350 relies upon a 32-bit DSP and utilizes an advanced vector control algorithm to provide a high performance and high precision motor control.

POWER RANGE

3AC 200-240V: **220V**	**1 - 75HP**
3AC 380-480V: **460V**	**2 - 150HP**
3AC 525-600V: **575V**	**1 - 150HP**
50/60Hz	Allowed range: 47 ~ 63Hz

Standard Features

- V/F (SVPWM), Sensorless Vector (SVC), Vector Control (VC) Closed Loop
- Asynchronous AC induction motors and PM motor control
- High precision speed, position and torque control and fast speed response
- Advanced PID functions
- High performance removable LCD graphic keypad, max length 200m.
- Overload capability 200% 1s, 180% 10s, 150% 60s
- Wall mount or panel mounting flange kits available (fins out)
- Embedded braking units from 1.5 - 30kW inverters, braking resistors optional
- C3 input filters standard for better EMC performance, C2 input filters optional
- Multiple braking modes
- Continuous running in instant power loss

Operating Parameters

- IP20 standard, NEMA 1/IP21 kits available
- -10~40°C, de-rate 1% for every additional 1°C to 50°C
- Installation up to 1000 MASL (3300 ft.)

Communication Protocols

- Modbus RTU/RS485 built in (standard)
- Profibus-DP (optional card)
- CANopen (optional card)
- Profinet (optional card)
- EtherNet/IP (optional card)

Technical Specifications

FUNCTIONS		SPECIFICATIONS
Power Input	Input voltage (V)	3PH 200V–240V Rated voltage: 220V 0.75~55kW (1~75HP) 3PH 380V–480V Rated voltage: 460V 1.5~110kW (2~150HP) 3PH 520V–600V Rated voltage: 575V 0.75~110kW (1~150HP) Allowable voltage fluctuation: -15%–+10%
	Input frequency (Hz)	50Hz or 60Hz, allowable range: 47–63Hz
Power Output	Output voltage (V)	0–input voltage
	Output frequency (Hz)	0-400Hz
Technical Control Features	Control Mode	SVPWM control, SVC, VC (Closed Loop)
	Motor type	Asynchronous motor, permanent-magnet synchronous motor
	Speed ratio	Asynchronous motor 1:200 (SVC); Synchronous motor 1:20 (SVC), 1:1000(VC)
	Speed control accuracy	±0.2% (SVC), ±0.02% (VC)
	Speed fluctuation	± 0.3% (SVC)
	Torque response	<20ms (SVC), <10ms (VC)
	Torque control accuracy	10% (SVC), 5% (VC)
	Starting torque	Asynchronous motor: 0.25Hz/150% (SVC) Synchronous motor: 2.5 Hz/150% (SVC) 0Hz/200% (VC)
	Overload capability	G type: 150%: 60s 180%: 10s 200%: 1s P type: 120%: 60s 150%: 10s 180%: 1s
Running Control Features	Frequency Setting	Digital, analog, pulse frequency, multi-step speed running, simple PLC, PID, Modbus communication, PROFIBUS communication, etc.
	Auto-adjustment of the voltage	Keeps the output voltage constant when grid voltage changes
	Fault protection	Provides over 30 kinds of fault protection functions: overcurrent, overvoltage, undervoltage, over-temperature, phase loss and overload, etc.
	Restart after rotating speed tracking	Impact-free starting of the motor in powerloss. Available for power ratings ≥4kW
Peripheral Interface	Analog input	2 inputs, AI1: 0~10V/0~20mA; AI2: -10~10V
	Analog output	1 output, AO1: 0–10V/0–20mA
	Digital input	4 regular inputs; max. frequency: 1kHz; internal impedance: 3.3k 2 high-speed inputs; max. frequency: 50kHz; supports quadrature encoder input
	Digital output	1 high-speed pulse output; max. frequency: 50kHz 1 Y terminal open collector output
	Relay output	2 programmable relay outputs. Contact capacity: 3A/AC250V, 1A/DC30V
	Safety Function	STO (Safe Torque OFF), SIL2
	Extension Inferface	Three extension inferfaces: SLOT1, SLOT2, SLOT3 Expandable PG card, programmable extension card, comm. card, I/O card, Master/Slave card, etc.
Others	Mountable method	Wall and flange mountable
	Temperature of the running environment	-10–50°C (Derating is required if the ambient temperature exceeds 40°C)
	Protective degree	IP20 standard, NEMA 1/IP21 kits available
	Cooling	Air-cooling
	Free Software	Topdrive Workshop (available at www.techtopcanada.com)
	Braking unit	Built-in (1~20HP) 220V Built-in (2~40HP) 460V Built-in (1~25HP) 575V External option for all other ratings
	Braking resistor	Optional
	EMC filter	The TD350 series are configured with built-in C3 filters, meeting the requirements of IEC61800-3 C3.

Model Designation

TD350 - 022G - 4
(1) (2) (3)

FUNCTION	NO.	DESCRIPTION	DETAILED CONTENT
Abbreviation	**1**	Product Abbreviation	**TD350:** Topdrive350 series
Power Range	**2**	Power Range	**022G: 22kW, G:** Constant torque
Voltage Degree	**3**	Voltage Degree	**2:** AC 3PH 200~240V Rated Voltage: 220V **4:** AC 3PH 380~480V Rated Voltage: 460V **6:** AC 3PH 520~600V Rated Voltage: 575V

Puchasing Data

HEAVY DUTY (HD) CT 150% OL 1MIN		NORMAL DUTY (ND) VT 120% OL 1MIN					TD350 IP20 VFD		NEMA 1/IP21 KIT	
HP	OUTPUT CURRENT (A)	HP	OUTPUT CURRENT (A)	FRAME SIZE	WEIGHT (LB)	DIMENSIONS (MM) WXHXD	MODEL	LIST PRICE	MODEL	LIST PRICE
AC 3PH 200~240V Rated Voltage: 220V										
1	4.5	--	--	1	4.4	126*186*185	**TD350-0R7G-2**	$ 720	**TD350N1KIT-1**	$ 35
2	7	--	--	2	7.7	146*256*192	**TD350-1R5G-2**	$ 870	**TD350N1KIT-2**	$ 42
3	10	--	--	2	7.7	146*256*192	**TD350-2R2G-2**	$ 967	**TD350N1KIT-2**	$ 42
5	16	--	--	3	13.2	170*320*219	**TD350-004G-2**	$ 1,101	**TD350N1KIT-3**	$ 49
7.5	20	--	--	3	13.2	170*320*219	**TD350-5R5G-2**	$ 1,310	**TD350N1KIT-3**	$ 49
10	30	--	--	4	17.2	230*330*217	**TD350-7R5G-2**	$ 1,670	**TD350N1KIT-4**	$ 56
15	42	--	--	5	20.9	255*400*242	**TD350-011G-2**	$ 2,805	**TD350N1KIT-5**	$ 70
20	55	--	--	5	20.9	255*400*242	**TD350-015G-2**	$ 2,927	**TD350N1KIT-5**	$ 70
25	70	--	--	6	66.1	270*555*325	**TD350-018G-2**	$ 3,614	**TD350N1KIT-6**	$ 147
30	80	--	--	6	66.1	270*555*325	**TD350-022G-2**	$ 4,185	**TD350N1KIT-6**	$ 147
40	110	--	--	6	66.1	270*555*325	**TD350-030G-2**	$ 4,784	**TD350N1KIT-6**	$ 147
50	130	--	--	7	102.5	325*680*365	**TD350-037G-2**	$ 5,960	**TD350N1KIT-7**	$ 147
60	160	--	--	7	102.5	325*680*365	**TD350-045G-2**	$ 7,362	**TD350N1KIT-7**	$ 147
75	200	--	--	7	102.5	325*680*365	**TD350-055G-2**	$ 8,259	**TD350N1KIT-7**	$ 147
AC 3PH 380~480V Rated Voltage: 460V										
2	3.7	--	--	1	4.4	126*186*185	**TD350-1R5G-4**	$ 763	**TD350N1KIT-1**	$ 35
3	5	--	--	1	4.4	126*186*185	**TD350-2R2G-4**	$ 827	**TD350N1KIT-1**	$ 35
5	9.5	7.5	14	2	7.7	146*256*192	**TD350-004G-4**	$ 967	**TD350N1KIT-2**	$ 42
7.5	14	10	18.5	2	7.7	146*256*192	**TD350-5R5G-4**	$ 1,230	**TD350N1KIT-2**	$ 42
10	18.5	15	25	3	13.2	170*320*219	**TD350-7R5G-4**	$ 1,632	**TD350N1KIT-3**	$ 49
15	25	20	32	3	13.2	170*320*219	**TD350-011G-4**	$ 2,051	**TD350N1KIT-3**	$ 49
20	32	25	38	4	17.2	230*330*217	**TD350-015G-4**	$ 2,540	**TD350N1KIT-4**	$ 56
25	38	30	45	4	17.2	230*330*217	**TD350-018G-4**	$ 3,118	**TD350N1KIT-4**	$ 56
30	45	40	60	5	20.9	255*400*242	**TD350-022G-4**	$ 3,620	**TD350N1KIT-5**	$ 70
40	60	50	75	5	20.9	255*400*242	**TD350-030G-4**	$ 4,547	**TD350N1KIT-5**	$ 70
50	75	60	92	6	66.1	270*555*325	**TD350-037G-4**	$ 5,264	**TD350N1KIT-6**	$ 147
60	92	75	115	6	66.1	270*555*325	**TD350-045G-4**	$ 6,553	**TD350N1KIT-6**	$ 147
75	115	--	--	6	66.1	270*555*325	**TD350-055G-4**	$ 7,595	**TD350N1KIT-6**	$ 147
100	150	125	180	7	102.5	325*680*365	**TD350-075G-4**	$ 9,963	**TD350N1KIT-7**	$ 147
125	180	150	215	7	102.5	325*680*365	**TD350-090G-4**	$ 12,009	**TD350N1KIT-7**	$ 147
150	215	--	--	7	102.5	325*680*365	**TD350-110G-4**	$ 13,755	**TD350N1KIT-7**	$ 147
AC 3PH 520~660V Rated Voltage: 575V										
1	2.1	--	--	2	6.6	146*256*192	**TD350-0R7G-6**	$1,100	**TD350N1KIT-2**	$42
2	3.2	--	--	2	6.6	146*256*192	**TD350-1R5G-6**	$1,215	**TD350N1KIT-2**	$42
3	4.5	--	--	2	6.6	146*256*192	**TD350-2R2G-6**	$1,233	**TD350N1KIT-2**	$42
5	6.5	--	--	3	12.7	170*320*219	**TD350-004G-6**	$1,598	**TD350N1KIT-3**	$49
7.5	9	--	--	3	12.7	170*320*219	**TD350-5R5G-6**	$1,729	**TD350N1KIT-3**	$49
10	12	--	--	3	12.7	170*320*219	**TD350-7R5G-6**	$1,965	**TD350N1KIT-3**	$49
15	16	--	--	4	15.8	230*330*217	**TD350-011G-6**	$2,440	**TD350N1KIT-4**	$56
20	21	--	--	4	15.8	230*330*217	**TD350-015G-6**	$2,785	**TD350N1KIT-4**	$56
25	27	--	--	4	15.8	230*330*217	**TD350-018G-6-01**	$3,680	**TD350N1KIT-4**	$56
25	27	--	--	6	66.1	270*555*325	**TD350-018G-6**	$ 5,110	**TD350N1KIT-6**	$ 147
30	35	--	--	6	66.1	270*555*325	**TD350-022G-6**	$ 5,145	**TD350N1KIT-6**	$ 147
40	45	--	--	6	66.1	270*555*325	**TD350-030G-6**	$ 5,893	**TD350N1KIT-6**	$ 147
50	52	--	--	6	66.1	270*555*325	**TD350-037G-6**	$ 7,589	**TD350N1KIT-6**	$ 147
60	62	--	--	7	102.5	270*555*325	**TD350-045G-6**	$ 8,794	**TD350N1KIT-7**	$ 147
75	86	--	--	7	102.5	325*680*365	**TD350-055G-6**	$ 10,604	**TD350N1KIT-7**	$ 147
100	98	--	--	7	102.5	325*680*365	**TD350-075G-6**	$ 14,439	**TD350N1KIT-7**	$ 147
125	120	--	--	7	102.5	325*680*365	**TD350-090G-6**	$ 16,025	**TD350N1KIT-7**	$ 147
150	150	--	--	7	102.5	325*680*365	**TD350-110G-6**	$ 17,858	**TD350N1KIT-7**	$ 147

Dimensional Drawings IP20

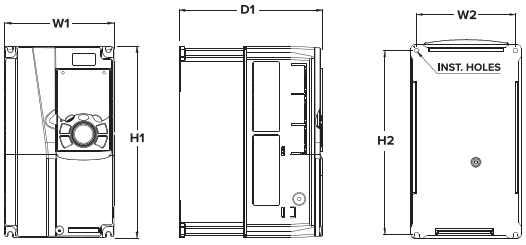


Figure 1 - Wall Mount Frames 1 - 5

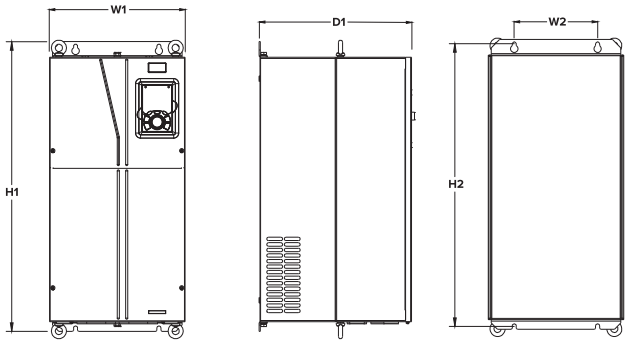


Figure 2 - Wall Mount Frames 6 - 7

FRAME	W1	W2	H1	H2	D1	INSTALLATION HOLES
1	126	115	186	175	185	4-Ø5
2	146	131	256	243.5	192	4-Ø5
3	170	151	320	303.5	219	4-Ø6
4	230	210	330	311	217	4-Ø6
5	255	237	400	384	242	4-Ø7
6	270	130	555	540	325	4-Ø7
7	325	200	680	661	365	4-Ø9.5

Dimensions are in **mm**

Dimensional Drawings NEMA 1/IP21 Kit

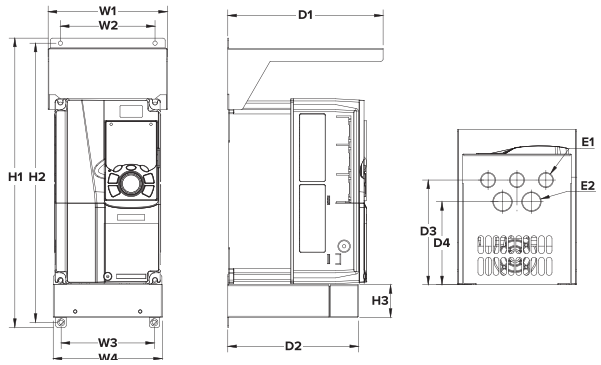


Figure 1 - Wall Mount Frames 1 - 5

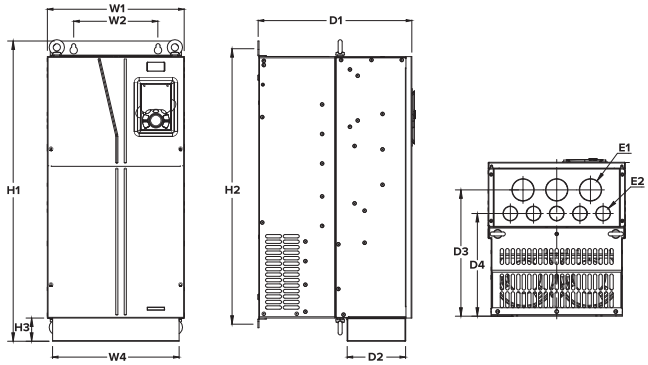
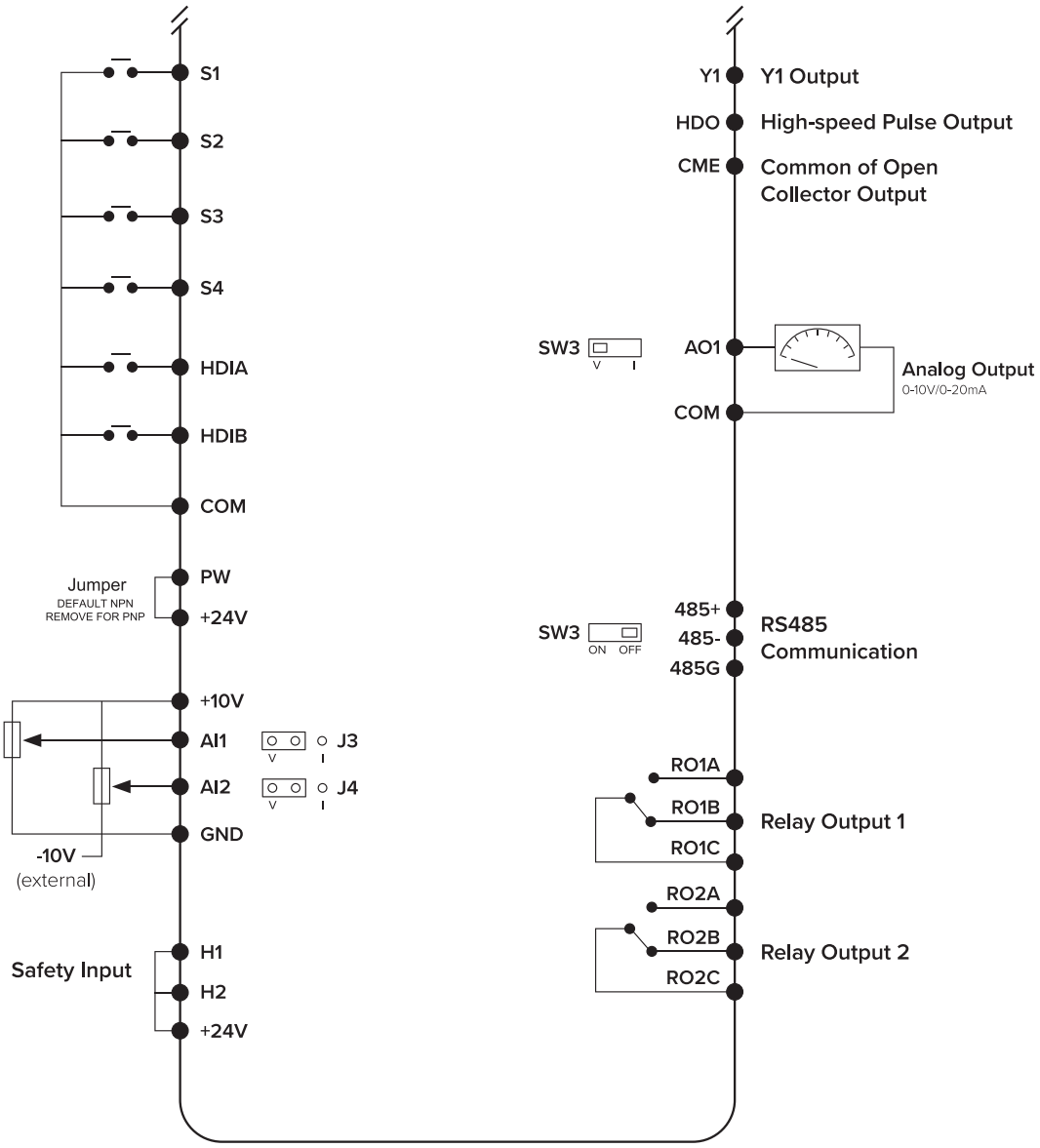


Figure 2 - Wall Mount Frames 6 - 7

FRAME	W1	W2	W3	W4	H1	H2	H3	D1	D2	D3	D4	E1	E2
1	146	115	110	130	332	318	45	200	176	133	108	3-Ø16	2-Ø21
2	165	131	129	151	400.5	386.5	45	215	181	145	115	3-Ø21	2-Ø27
3	185	151	145	171	520.5	506	45	245	208.9	177	147	4-Ø21	3-Ø27
4	249	210	206	231	537.5	518.5	45	245	204	170	132	4-Ø27	3-Ø35
5	275	236	232	257	605.5	589.5	45	280	230	192	152	4-Ø35	3-Ø41
6	270	130	--	240	582.5	540	45	325	119.6	277.8	225.8	4-Ø41	3-Ø35
7	325	200	--	300	712	661	55	365	139	318.5	262.5	5-Ø35	3-Ø53

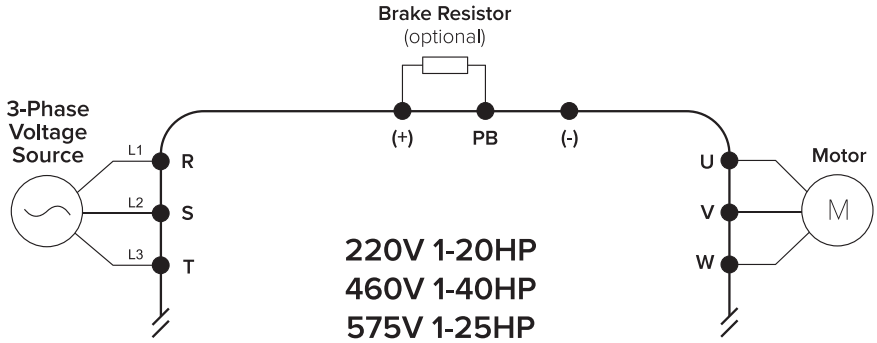
Dimensions are in **mm**

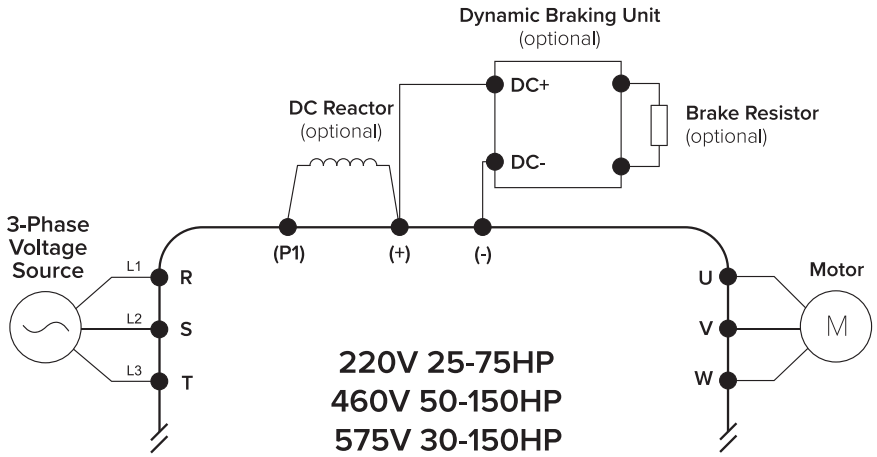
Control Circuit Wiring Diagram



I/O Terminals

INPUT/OUTPUT	TYPE	QUANTITY	DESCRIPTION
Input	Digital input	4 (S1-S4)	1kHz, NPN and PNP
	High speed pulse input	2 (HDIA, HDIB)	50kHz, NPN and PNP
	Analog input	2 (AI1-AI2)	0~20mA, -10V~+10V
Output	ON-OFF output	1 (Y1)	Maximum output frequency: 1kHz
	High speed pulse output	1 (HDO)	Maximum output frequency: 50kHz
	Analog output	1 (AO1)	0~10V, 0~20mA
	Relay output	2 (RO1-RO2)	3A/250VAC, 1A/30VDC, NO+NC





Power Terminals

POWER TERMINALS	220V ≤20HP 460V ≤40HP 575V ≤25HP	220V ≥25HP 460V ≥50HP 575V ≥30HP	FUNCTION
R, S, T (L1, L2, L3)	Power input of the main circuit	Power input of the main circuit	Three phase AC input terminals which are generally connected with the power supply.
U, V, W	Power output of the VFD	Power output of the VFD	Three phase AC output terminals which are generally connected to the motor.
P1	N/A	DC Reactor Terminal 1	• P1 and (+) are connected with the terminals of DC reactor. • (+) and (–) are connected with the terminals of brake unit. • PB and (+) are connected with the terminals of brake resistor.
(+)	Brake Resistor Terminal 1	DC reactor terminal 2, Brake unit terminal 1	
(–)	N/A	Brake unit terminal 2	
PB	Brake Resistor Terminal 2	N/A	
PE	Protective grounding terminals, every machine is provided 2 PE terminals as the standard configuration. These terminals should be grounded with proper techniques.		Protective grounding terminal.

ACCESSORIES

LOW VOLTAGE VARIABLE FREQUENCY DRIVE ACCESSORIES

TOPDRIVE SERIES

ACCESSORIES

Keypads And Extension Cables

MODEL	SERIES	DESCRIPTION	LIST PRICE
11022-00129	TD20	Techtop VFD Accessory TD20 Led Copy Keypad	$ 56
11022-00121	TD20	Techtop VFD Accessory TD20 Led Keypad	$ 49
61001-00090	TD20	Techtop VFD Accessory TD20 Recessed Keypad Mounting Bracket	$ 14
11022-00153	TD350	Techtop VFD Accessory TD350 LCD Keypad	$ 91
19005-00149	TD350	Techtop VFD Accessory TD350 Recessed Keypad Mounting Bracket	$ 7
TD-KEC-02M	ALL	Techtop VFD Accessory Keypad Extension Cable 2m Unshielded	$ 21
TD-KEC-03M	ALL	Techtop VFD Accessory Keypad Extension Cable 3m Shielded	$ 28
TD-KEC-05M	ALL	Techtop VFD Accessory Keypad Extension Cable 5m Shielded	$ 42
TD-KEC-10M	ALL	Techtop VFD Accessory Keypad Extension Cable 10m Shielded	$ 91
DT-5019-1.5M	ALL	Techtop VFD Accessory Dtech Serial COM USB to RS422/485 Converter 1.5m	$ 67

Dynamic Braking Units (DBU)

MODEL	SERIES	VOLTAGE	POWER RANGE	QAUNTITY REQUIRED	LIST PRICE
DBU-055-2	TD350	220V	7.5-22kW	1	$ 677
			30-55kW	2	
DBU-055-4	TD350	480V	18.5-55kW	1	$ 796
			75-110kW	2	
DBU100H-110-6	TD350	600V	18.5-110kW	1	$ 2,673

Flange Mounting Plates

MODEL	SERIES	DESCRIPTION	LIST PRICE
19005-00005	TD350	Techtop VFD Accessory TD350 Flange Mounting Plate Frame 1	$ 28
19005-00013	TD350	Techtop VFD Accessory TD350 Flange Mounting Plate Frame 2	$ 28
19005-00006	TD350	Techtop VFD Accessory TD350 Flange Mounting Plate Frame 3	$ 35
19005-00014	TD350	Techtop VFD Accessory TD350 Flange Mounting Plate Frame 4	$ 35
19005-00015	TD350	Techtop VFD Accessory TD350 Flange Mounting Plate Frame 5	$ 42

Communication Cards

MODEL	SERIES	DESCRIPTION	LIST PRICE
TD350-EC-TX503	TD350	Techtop VFD Accessory TD350 Profibus-DP Communications Card	$ 420.00
TD350-EC-TX503	TD350	Techtop VFD Accessory TD350 CANopen Communications Card	$ 175.00
TD350-EC-TX501-1	TD350	Techtop VFD Accessory TD350 Bluetooth Card (Built In Antenna)	$ 70.00
TD350-EC-TX501-2	TD350	Techtop VFD Accessory TD350 Bluetooth Card (External Antenna)	$ 84.00
TD350-EC-TX509	TD350	Techtop VFD Accessory TD350 Profinet Communication Card	$ 455.00
TD350-EC-TX502-1	TD350	Techtop VFD Accessory TD350 Wifi Card (Built In Antenna)	$ 105.00
TD350-EC-TX502-2	TD350	Techtop VFD Accessory TD350 Wifi Card (External Antenna)	$ 119.00
TD350-EC-TX510	TD350	Techtop VFD Accessory TD350 Ethernet/IP Communication Card	$ 210.00
TD350-EC-TX511	TD350	Techtop VFD Accessory TD350 Can Master/Slave Communication Card	$ 175.00

Encoder Cards

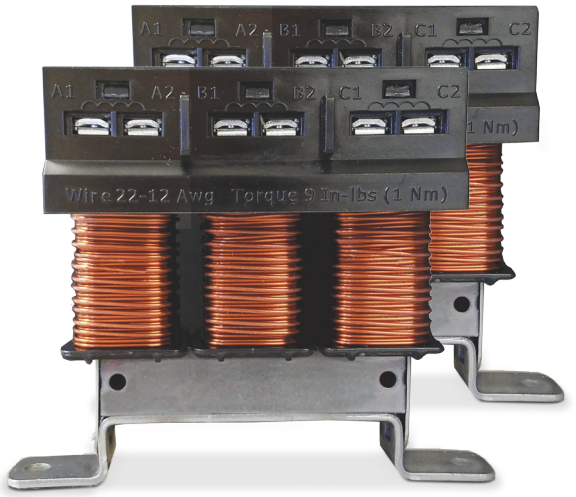
MODEL	SERIES	DESCRIPTION	LIST PRICE
TD350-EC-PG503-05	TD350	Techtop VFD Accessory TD350 5V Differential Incremental (H2)	$ 245.00
TD350-EC-PG504-00	TD350	Techtop VFD Accessory TD350 Resolver Type PG Card (D1)	$ 245.00
TD350-EC-PG505-12	TD350	Techtop VFD Accessory TD350 5V/12V Multifunctional Incremental (H1)	$ 245.00
TD350-EC-PG505-24	TD350	Techtop VFD Accessory TD350 24V Incremental PG Card	$ 210.00
TD350-EC-PG502	TD350	Techtop VFD Accessory TD350 Sin/Cos PG Card	$ 210.00
TD350-EC-PG507-12	TD350	Techtop VFD Accessory TD350 Multifunctional Incremental PG Card	$ 140.00

0.25 - 250HP, 208/240V, 480V, 575/600V, CHASSIS MOUNT & NEMA 1

KDR LINE/LOAD REACTORS

Product Overview

KDR line reactors are electrical components that help to protect 6-pulse rectifiers and power conversion devices such as variable frequency drives (VFDs). When used in conjunction with a VFD, a KDR line reactor can help reduce harmonics and protect the drive from harmful voltage spikes. KDR line reactors are recommended on the input of each VFD in multiple drive applications.



Benefits of KDR Line Reactors

Helps to meet IEEE 519-2014 requirements
208V-600V; 0.25HP-250HP
Available in Ultra Low, Low and High Impedance
Strong durable design specifically for VFD applications
UL Listed
Made in the USA

Part Numbering

KDR	AA	3	L	2	E01
1	2	3	4	5	6

NO.	DESCRIPTION	DETAILED CONTENT
1	KDR Series	--
2	Design Frame	--
3	Sequence Code	--
4	Impedance Rating	**P** - Ultra Low **L** - Low **H** - High
5	Foot	**1** - Side **2** - Thin (Blank if not MA/AA)
6	Enclosure	**E01** - UL Type 1 **E3R** - UL Type 3R **E3R1** - UL Type 3R (MA/AA) **C1** - NEMA 1 (MA/AA)

*May vary based on voltage

NEMA 1 Enclosure Kit

KIT PART #	DIMENSIONS HXWXD (INCHES)	WEIGHT (LB)	LIST PRICE
C1	6.5 x 8.0 x 6.0	4	$ 283
C2	7.5 x 10.0 x 7.0	6	$ 338
C3	9.0 x 12.0 x 8.0	12	$ 479
C4	15.5 x 15.0 x 13.0	35	$ 834
C5	18.5 x 20.0 x 16.0	50	CALL

3% (LOW IMPEDENCE)

208/240V

NEC MOTOR HP	CHASSIS PART #	NEC MOTOR AMPS	MAX CONT. AMPS	WATTS LOSS	TERMINALS	DIMENSIONS HxWxD (INCHES)	WEIGHT (LB)	ENCLOSURE SIZE	LIST PRICE
0.25	KDRMA21L1	1.4	3.4	4.6	TB	3.63 x 4.45 x 1.78	1.4	C1	$ 194
0.5	KDRMA22L1	2.4	5	6.8	TB	3.63 x 4.45 x 1.78	3.7	C1	$ 205
0.75	KDRMA23L1	3.5	4.2	12.9	TB	3.63 x 4.45 x 1.79	3	C1	$ 223
1	KDRMA24L1	4.6	5.5	19.2	TB	3.63 x 4.45 x 1.80	3.2	C1	$ 246
1.5	KDRMA25L1	6.6	8	23.3	TB	3.63 x 4.45 x 1.81	3.2	C1	$ 254
2	KDRMA27L1	7.5	10	27	TB	3.63 x 4.45 x 1.82	4	C1	$ 268
3	KDRAA28L2	10.6	12	42	TB	4.44 x 4.25 x 3.53	3	C1	$ 295
5	KDRB22L	16.7	19	38	TB	5.00 x 6.00 x 4.00	8	C1	$ 389
7.5	KDRB23L	24.2	25	48	TB	5.00 x 6.00 x 4.00	8	C2	$ 403
10	KDRD25L	30.8	34	64	TB	5.75 x 7.20 x 4.25	12	C2	$ 458
15	KDRD24L	46.2	48	85	TB	5.75 x 7.20 x 4.25	12	C2	$ 567
20	KDRD26L	59.4	62	94	TB	5.75 x 7.20 x 4.25	12	C2	$ 601
25	KDRC22L	74.8	80	114	TB	5.75 x 7.20 x 5.00	15	C2	$ 806
30	KDRF24L	88	100	135	CB	7.00 x 9.00 x 6.00	30	C4	$ 1,115
40	KDRF25L	114	118	149	CB	7.00 x 9.00 x 6.00	30	C4	$ 1,217
50	KDRF26L	143	152	154	CB	7.00 x 9.00 x 6.00	30	C4	$ 1,428
60	KDRH22L	169	180	209	CB	8.31 x 10.50 x 6.00	45	C4	$ 1,669
75	KDRI23L	211	211	294	CB	8.50 x 11.00 x 7.00	50	C4	$ 1,702
100	KDRI24L	273	280	276	CB	8.50 x 11.00 x 7.00	50	C4	$ 1,903

5% (HIGH IMPEDENCE)

NEC MOTOR HP	CHASSIS PART #	NEC MOTOR AMPS	MAX CONT. AMPS	WATTS LOSS	TERMINALS	DIMENSIONS HxWxD (INCHES)	WEIGHT (LB)	ENCLOSURE SIZE	LIST PRICE
0.25	KDRMA21H1	1.4	2.3	8	TB	3.63 x 4.45 x 1.78	1.3	C1	$ 198
0.5	KDRMA22H1	2.4	3.4	24.9	TB	3.63 x 4.45 x 1.78	1.4	C1	$ 209
0.75	KDRMA23H1	3.5	5	16.1	TB	3.63 x 4.45 x 1.79	3.7	C1	$ 233
1	KDRMA24H1	4.6	5	28.7	TB	3.63 x 4.45 x 1.80	3	C1	$ 254
1.5	KDRMA25H1	6.6	7.5	28.6	TB	3.63 x 4.45 x 1.81	3	C1	$ 268
2	KDRMA26H1	7.5	10	32.5	TB	3.63 x 4.45 x 1.82	4	C1	$ 297
3	KDRAA28H2	10.6	11	44.6	TB	4.44 x 4.25 x 2.64	2.6	C1	$ 340
5	KDRB25H	16.7	17	53.1	TB	5.00 x 6.00 x 4.00	8	C1	$ 436
7.5	KDRB26H	24.2	26	66.5	TB	5.00 x 6.00 x 4.00	8	C1	$ 520
10	KDRD21H	30.8	31	91.8	TB	5.75 x 7.20 x 4.25	12	C2	$ 528
15	KDRD22H	46.2	47	107.8	TB	5.75 x 7.20 x 4.25	12	C2	$ 689
20	KDRC22H	59.4	62	113.1	TB	5.75 x 7.20 x 5.00	15	C2	$ 779
25	KDRF28H	74.8	75	151	TB	7.00 x 9.00 x 6.00	30	C3	$ 917
30	KDRF25H	88	92	179.2	CB	7.00 x 9.00 x 6.00	30	C4	$ 1,205
40	KDRF26H	114	114	192.8	CB	7.00 x 9.00 x 6.00	30	C4	$ 1,275
50	KDRH24H	143	143	201	CB	8.31 x 10.50 x 6.00	38	C4	$ 1,528
60	KDRH23H	169	169	220	CB	8.31 x 10.50 x 6.00	45	C4	$ 1,778
75	KDRI22H	211	220	311.5	CB	8.50 x 11.00 x 7.00	50	C4	$ 2,193
100	KDRI21H	273	275	296.4	CB	8.50 x 11.00 x 7.00	50	C4	$ 2,703

KDR LINE/LOAD REACTORS

0.25 - 250HP, 208/240V, 480V, 575/600V, CHASSIS MOUNT & NEMA 1

TECHTOP

480V

3% (LOW IMPEDENCE)

NEC MOTOR HP	CHASSIS PART #	NEC MOTOR AMPS	MAX CONT. AMPS	WATTS LOSS	TERMINALS	DIMENSIONS HxWxD (INCHES)	WEIGHT (LB)	ENCLOSURE SIZE	LIST PRICE
0.25	KDRMA1L1	0.7	1.4	5	TB	3.63 x 4.45 x 1.78	1.3	C1	$ 155
0.33	KDRMA2L1	0.8	1.7	6.2	TB	3.63 x 4.45 x 1.78	1.3	C1	$ 160
0.5	KDRMA3L1	1.1	1.6	9.7	TB	3.63 x 4.45 x 1.78	1.3	C1	$ 162
0.75	KDRMA4L1	1.6	2.3	12.1	TB	3.63 x 4.45 x 1.78	1.3	C1	$ 172
1	KDRMA5L1	2.1	2.3	25.2	TB	3.63 x 4.45 x 1.78	1.2	C1	$ 186
1.5	KDRMA6L1	3	3.4	26.4	TB	3.63 x 4.45 x 1.78	1.4	C1	$ 203
2	KDRMA7L1	3.4	4.2	23.5	TB	3.63 x 4.45 x 1.78	1.4	C1	$ 207
3	KDRMA8L1	4.8	5	30.6	TB	3.63 x 4.45 x 1.78	1.4	C1	$ 227
4	KDRAA6L2	6.2	7.6	39	TB	4.44 x 4.25 x 2.64	3	C1	$ 246
5	KDRAA3L2	7.6	8.2	45	TB	4.44 x 4.25 x 2.64	3	C1	$ 250
7.5	KDRAA4L2	11	11	64	TB	4.44 x 4.25 x 2.64	3.2	C1	$ 254
10	KDRAA5L2	14	14	77.7	TB	4.44 x 4.25 x 2.64	3.3	C1	$ 376
15	KDRB2L	21	30	65	TB	5.00 x 6.00 x 4.00	8	C1	$ 469
20	KDRB1L	27	30	79	TB	5.00 x 6.00 x 4.00	8	C1	$ 518
25	KDRD1L	34	50	96	TB	5.75 x 7.20 x 4.25	10	C2	$ 544
30	KDRD2L	40	45	105	TB	5.75 x 7.20 x 4.25	10	C2	$ 689
40	KDRC1L	52	55	114	TB	5.75 x 7.20 x 5.00	15	C2	$ 761
50	KDRF2L	65	65	114	TB	7.00 x 9.00 x 6.00	25	C3	$ 890
60	KDRF4L	77	77	169	TB	7.00 x 9.00 x 6.00	25	C3	$ 917
75	KDRF3L	96	110	193	CB	7.00 x 9.00 x 6.00	30	C4	$ 1,221
100	KDRH3L	124	150	225	CB	8.31 x 10.50 x 6.00	40	C4	$ 1,414
125	KDRH2L	156	165	254	CB	8.31 x 10.50 x 6.00	40	C4	$ 1,747
150	KDRH1L	180	185	299	CB	8.31 x 10.50 x 6.00	40	C4	$ 2,050
200	KDRG3L	240	240	280	CB	10.15 x 11.38 x 8.25	65	C4	$ 2,602
250	KDRG1L	302	340	337	CB	10.15 x 11.50 x 8.50	65	C4	$ 2,866

5% (HIGH IMPEDENCE)

NEC MOTOR HP	CHASSIS PART #	NEC MOTOR AMPS	MAX CONT. AMPS	WATTS LOSS	TERMINALS	DIMENSIONS HxWxD (INCHES)	WEIGHT (LB)	ENCLOSURE SIZE	LIST PRICE
0.25	KDRMA1H1	0.7	1.4	7.9	TB	3.63 x 4.45 x 1.78	1.3	C1	$ 160
0.33	KDRMA2H1	0.8	1.4	9.2	TB	3.63 x 4.45 x 1.78	1.5	C1	$ 164
0.5	KDRMA3H1	1.1	1.6	14.3	TB	3.63 x 4.45 x 1.78	1.3	C1	$ 166
0.75	KDRMA4H1	1.6	2.1	19.3	TB	3.63 x 4.45 x 1.78	1.4	C1	$ 178
1	KDRMA5H1	2.1	2.3	26.7	TB	3.63 x 4.45 x 1.78	1.4	C1	$ 194
1.5	KDRMA6H1	3	3.6	30	TB	3.63 x 4.45 x 1.78	1.6	C1	$ 231
2	KDRAA1H2	3.4	3.8	45	TB	4.44 x 4.25 x 2.64	2.8	C1	$ 237
3	KDRAA2H2	4.8	5.4	42	TB	4.44 x 4.25 x 2.64	3	C1	$ 243
4	KDRAA6H2	6.2	7.6	50	TB	4.44 x 4.25 x 2.64	3.4	C1	$ 286
5	KDRAA3H2	7.6	8.2	66	TB	4.44 x 4.25 x 2.64	3.7	C1	$ 295
7.5	KDRAA4H2	11	12	70	TB	4.44 x 4.25 x 2.64	4	C1	$ 417
10	KDRAA5H2	14	14	97.7	TB	4.44 x 4.25 x 2.64	4.2	C1	$ 499
15	KDRB2H	21	27	133	TB	5.00 x 6.00 x 4.00	7	C1	$ 604
20	KDRC3H	27	27	108	TB	5.75 x 7.20 x 5.00	15	C2	$ 679
25	KDRC1H	34	35	112	TB	5.75 x 7.20 x 5.00	15	C2	$ 814
30	KDRE2H	40	45	141	TB	5.75 x 7.20 x 5.00	16	C2	$ 927
40	KDRF4H	52	60	169	TB	7.00 x 9.00 x 6.00	25	C3	$ 962
50	KDRF1H	65	85	191	TB	7.00 x 9.00 x 6.00	25	C3	$ 1,328
60	KDRF2H	77	77	226	TB	7.00 x 9.00 x 6.00	25	C3	$ 1,375
75	KDRH2H	96	100	212	CB	8.31 x 10.50 x 6.00	45	C4	$ 1,561
100	KDRI2H	124	125	362	CB	8.50 x 10.50 x 6.31	50	C4	$ 1,870
125	KDRG3H	156	160	274	CB	10.15 x 10.75 x 7.31	55	C4	$ 2,103
150	KDRG1H	180	185	359	CB	10.15 x 11.38 x 8.25	55	C4	$ 2,568
200	KDRJ1H	240	240	420	CB	10.00 x 10.88 x 9.00	70	C5	$ 3,408
250	KDRL1H	302	310	548	CB	12.75 x 14.75 x 9.25	110	C5	$ 3,719

3% (LOW IMPEDENCE)

575/600V

NEC MOTOR HP	CHASSIS PART #	NEC MOTOR AMPS	MAX CONT. AMPS	WATTS LOSS	TERMINALS	DIMENSIONS HxWxD (INCHES)	WEIGHT (LB)	ENCLOSURE SIZE	LIST PRICE
0.25	KDRMA41L1	0.5	0.8	3.9	TB	3.63 x 4.45 x 1.78	1.2	C1	$ 155
0.33	KDRMA42L1	0.7	1.1	6.1	TB	3.63 x 4.45 x 1.78	1.2	C1	$ 160
0.5	KDRMA43L1	0.9	1.6	8.5	TB	3.63 x 4.45 x 1.78	1.1	C1	$ 168
0.75	KDRMA44L1	1.3	2.1	10.9	TB	3.63 x 4.45 x 1.78	1.3	C1	$ 178
1	KDRMA45L1	1.7	2.1	16.2	TB	3.63 x 4.45 x 1.78	1.3	C1	$ 192
1.5	KDRMA46L1	2.4	3.4	17.2	TB	3.63 x 4.45 x 1.78	1.4	C1	$ 243
2	KDRMA47L1	2.7	3.2	20.5	TB	3.63 x 4.45 x 1.78	1.5	C1	$ 256
3	KDRAA52L2	3.9	4.8	30.1	TB	4.44 x 4.25 x 2.64	3.5	C1	$ 264
4	KDRAA57L2	4.9	7.6	29.9	TB	4.44 x 4.25 x 2.64	2.9	C1	$ 276
5	KDRAA58L2	6.1	7.6	38.5	TB	4.44 x 4.25 x 2.64	3	C1	$ 280
7.5	KDRAA48L2	9	9	56.8	TB	4.44 x 4.25 x 2.64	3.2	C1	$ 342
10	KDRAA49L2	11	11	43.8	TB	4.44 x 4.25 x 2.64	3.8	C1	$ 362
15	KDRB45L	17	19.5	66.2	TB	5.00 x 6.00 x 4.00	8	C1	$ 466
20	KDRB44L	22	24	71.2	TB	5.00 x 6.00 x 4.00	8	C1	$ 491
25	KDRB43L	27	30	76.7	TB	5.00 x 6.00 x 4.00	8	C1	$ 538
30	KDRD42L	32	32	106	TB	5.75 x 7.20 x 4.25	12	C2	$ 544
40	KDRC43L	41	41	109	TB	5.75 x 7.20 x 5.00	15	C2	$ 591
50	KDRC44L	52	52	123	TB	5.75 x 7.20 x 5.00	15	C2	$ 638
60	KDRF46L	62	62	181	TB	7.00 x 9.00 x 6.00	30	C3	$ 847
75	KDRF47L	77	77	194	TB	7.00 x 9.00 x 6.00	30	C3	$ 882
100	KDRF45L	99	99	194	CB	7.00 x 9.00 x 6.00	30	C4	$ 1,221
125	KDRH43L	125	125	261	CB	8.31 x 10.50 x 6.00	45	C4	$ 1,389
150	KDRH44L	144	144	253	CB	8.31 x 10.50 x 6.00	45	C4	$ 1,725
200	KDRI42L	192	192	342	CB	8.50 x 11.00 x 7.00	50	C4	$ 1,839
250	KDRG47L	242	242	394	CB	10.15 x 11.38 x 8.25	65	C4	$ 2,052

5% (HIGH IMPEDENCE)

NEC MOTOR HP	CHASSIS PART #	NEC MOTOR AMPS	MAX CONT. AMPS	WATTS LOSS	TERMINALS	DIMENSIONS HxWxD (INCHES)	WEIGHT (LB)	ENCLOSURE SIZE	LIST PRICE
0.25	KDRMA41H1	0.5	0.8	5.9	TB	3.63 x 4.45 x 1.78	1.3	C1	$ 160
0.33	KDRMA42H1	0.7	0.75	9.1	TB	3.63 x 4.45 x 1.78	1.2	C1	$ 164
0.5	KDRMA43H1	0.9	1.1	12.9	TB	3.63 x 4.45 x 1.78	1.5	C1	$ 174
0.75	KDRMA44H1	1.3	1.6	14.6	TB	3.63 x 4.45 x 1.78	1.6	C1	$ 184
1	KDRMA45H1	1.7	2.1	27	TB	3.63 x 4.45 x 1.78	1.5	C1	$ 196
1.5	KDRAA46H2	2.4	3.2	26	TB	4.44 x 4.25 x 2.64	2.9	C1	$ 250
2	KDRAA43H2	2.7	3.4	23	TB	4.44 x 4.25 x 2.64	2.7	C1	$ 262
3	KDRAA44H2	3.9	4.5	34	TB	4.44 x 4.25 x 2.64	2.9	C1	$ 270
4	KDRAA57H2	4.9	6	47.9	TB	4.44 x 4.25 x 2.64	3.5	C1	$ 282
5	KDRAA58H2	6.1	6.8	43.7	TB	4.44 x 4.25 x 2.64	3.4	C1	$ 297
7.5	KDRB42H	9	10	61.1	TB	5.00 x 6.00 x 4.00	8	C2	$ 554
10	KDRB43H	11	11	70.7	TB	5.00 x 6.00 x 4.00	8	C2	$ 624
15	KDRB44H	17	18.5	73	TB	5.00 x 6.00 x 4.00	8	C2	$ 640
20	KDRD41H	22	23	105.6	TB	5.75 x 7.20 x 4.25	12	C2	$ 679
25	KDRC43H	27	30	107.4	TB	5.75 x 7.20 x 5.00	15	C2	$ 737
30	KDRE42H	32	32	140.3	TB	5.75 x 7.20 x 5.00	16	C2	$ 857
40	KDRF44H	41	44	172.2	TB	7.00 x 9.00 x 6.00	30	C3	$ 1,021
50	KDRF45H	52	58	165.6	TB	7.00 x 9.00 x 6.00	30	C3	$ 1,301
60	KDRH43H	62	62	205	TB	9.00 x 11.00 x 6.00	45	C4	$ 1,401
75	KDRH42H	77	82	251	TB	9.00 x 11.00 x 6.00	45	C4	$ 1,461
100	KDRI41H	99	99	268	CB	8.50 x 10.50 x 6.31	50	C4	$ 2,124
125	KDRG44H	125	130	381.3	CB	10.15 x 10.75 x 7.31	65	C4	$ 2,236
150	KDRG45H	144	155	405.9	CB	10.15 x 11.38 x 8.25	65	C4	$ 2,336
200	KDRJ41H	192	192	466.4	CB	10.00 x 11.00 x 8.65	70	C5	$ 2,973
250	KDRL46H	242	260	472.3	CB	12.75 x 14.75 x 11.00	110	C5	$ 4,176

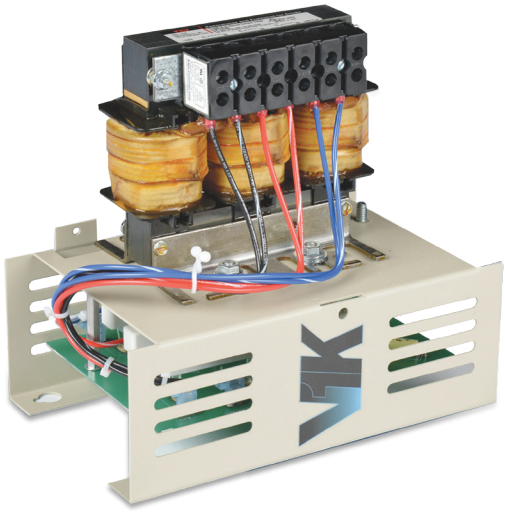
1 - 250HP, 208/240V, 480V, 600V, CHASSIS MOUNT & UL TYPE 1 (NEMA 1)

V1K DV/DT FILTERS

Product Overview

The V1k dv/dt motor protection filter is an output device that prevents voltage spikes from variable frequency drives (VFD) from exceeding 1000V for long lead applications at 480VAC and 1300V for 600VAC. The V1K minimizes these voltage wave amplitudes and slows the rate of voltage increases.

As Pulse Width Modulated (PWM) Drives are incorporated into various applications and processes, the increased energy savings and decreased maintenance on drives can be offset by increases in motor failures. The V1k product family has been designed as an engineered solution for motor failures due to the reflected wave phenomenon.



Standard Features

- Limits voltage spikes to below 1000V for applications with lead lengths up to 1,000 ft
- Reduces motor heating, noise and vibration
- Greatly extends the life of the motor and cable
- Specific applications can reach 3,000 feet
- Prevents motor failure with protection against motor insulation breakdown
- Reduces Common Mode by a minimum of 30%
- Improves system productivity by increasing motor bearing life
- 208/240VAC, 480VAC, 600VAC system compatibility
- 2 - 305 Amps range

Part Numbering

V1K (1) **80** (2) **A01** (3) **EX** (4)

NO.	DESCRIPTION	DETAILED CONTENT
1	Series	--
2	Current Rating (amps)	--
3	Enclosure	**A00** - Open **A01** - UL Type 1 **A03** - UL Type 3R
4	Option A	**(Blank)** - No Options **EX** - Heavy Duty Model

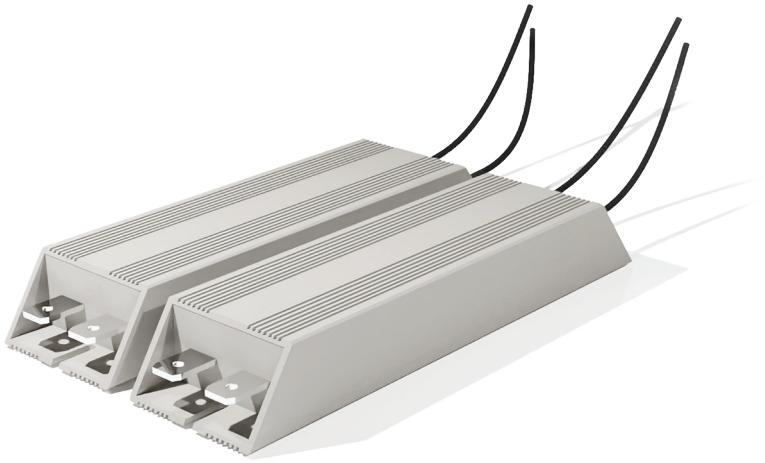
CHASSIS PART #	MOTOR HP 240V	MOTOR HP 480V	MOTOR HP 600V	AMPS	WATT LOSS	DIMENSIONS HXWXD (INCHES)	WEIGHT (LB)	LIST PRICE
V1K2A00	-	0.75	1	2	75	9.00 x 5.50 x 7.25	8	**$ 1,039**
V1K3A00	0.5	1 - 1.5	2	3	75	9.00 x 5.50 x 7.25	8	**$ 1,062**
V1K4A00	0.75	2	3	4	75	9.00 x 5.50 x 7.25	8	**$ 1,086**
V1K6A00	1 - 1.5		-	6	80	9.00 x 5.50 x 7.25	8	**$ 1,114**
V1K8A00	2	5	5	8	90	9.00 x 5.50 x 8.25	8	**$ 1,133**
V1K12A00	3	7.5	10	12	95	9.00 x 5.50 x 8.25	8	**$ 1,176**
V1K16A00	5	10	-	16	95	9.00 x 5.50 x 8.25	12	**$ 1,189**
V1K18A00	-	10	15	18	110	9.00 x 5.50 x 8.25	12	**$ 1,313**
V1K21A00	-	15	-	21	110	9.00 x 5.50 x 8.25	12	**$ 1,485**
V1K25A00	7.5	15	20	25	110	9.00 x 5.50 x 8.25	12	**$ 1,588**
V1K27A00	-	20	25	27	110	9.00 x 5.50 x 8.25	14	**$ 1,650**
V1K35A00	10	25	30	35	130	12.00 x 8.00 x 9.00	17	**$ 1,719**
V1K45A00	15	30		45	135	12.00 x 8.00 x 9.00	17	**$ 1,787**
V1K55A00	20	40	50	55	145	12.00 x 8.00 x 9.00	23	**$ 1,845**
V1K80A00	25 - 30	50 - 60	75	80	255	12.00 x 8.00 x 9.00	23	**$ 2,603**
V1K110A00	40	75	100	110	245	12.00 x 8.00 x 10.25	40	**$ 3,058**
V1K130A00	50	100	125	130	270	8.50 x 11.75 x 9.50	55	**$ 3,573**
V1K160A00	60	125	150	160	260	8.50 x 11.75 x 10.50	60	**$ 3,940**
V1K200A00	75	150	200	200	265	8.50 x 11.75 x 9.25	60	**$ 4,294**
V1K250A00	100	200	250	250	290	8.50 x 11.75 x 9.25	65	**$ 4,412**
V1K305A00	-	250	300	305	325	8.75 x 11.75 x 12.25	80	**$ 4,796**

NEMA 1 PART #	MOTOR HP 240V	MOTOR HP 480V	MOTOR HP 600V	RATED CURRENT	WATT LOSS	DIMENSIONS HXWXD (INCHES)	WEIGHT (LB)	LIST PRICE
V1K2A01	-	0.75	1	2	75	9.00 x 5.50 x 10.00	11	**$ 1,652**
V1K3A01	0.5	1 - 1.5	2	3	75	9.00 x 5.50 x 10.00	11	**$ 1,665**
V1K4A01	0.75	2	3	4	75	9.00 x 5.50 x 10.00	11	**$ 1,674**
V1K6A01	1 - 1.5	-	-	6	80	9.00 x 5.50 x 10.00	11	**$ 1,704**
V1K8A01	2	5	5	8	90	9.00 x 5.50 x 10.00	11	**$ 1,742**
V1K12A01	3	7.5	10	12	95	9.00 x 5.50 x 10.00	11	**$ 1,820**
V1K16A01	5	10	-	16	95	9.00 x 5.50 x 10.00	15	**$ 1,854**
V1K18A01	-	10	15	18	110	9.00 x 5.50 x 10.00	15	**$ 1,933**
V1K21A01	-	15	-	21	110	9.00 x 5.50 x 10.00	15	**$ 2,013**
V1K25A01	7.5	15	20	25	110	9.00 x 5.50 x 10.00	15	**$ 2,058**
V1K27A01	-	20	25	27	110	9.00 x 5.50 x 10.00	15	**$ 2,133**
V1K35A01	10	25	30	35	130	12.00 x 8.00 x 11.50	23	**$ 2,208**
V1K45A01	15	30	40	45	135	12.00 x 8.00 x 11.50	23	**$ 2,279**
V1K55A01	20	40	50	55	145	12.00 x 8.00 x 11.50	23	**$ 2,485**
V1K80A01	25 - 30	50 - 60	75	80	255	12.00 x 8.00 x 11.50	29	**$ 3,238**
V1K110A01	40	75	100	110	245	16.50 x 18.00 x 15.00	68	**$ 4,442**
V1K130A01	50	100	125	130	270	16.50 x 18.00 x 15.00	83	**$ 5,006**
V1K160A01	60	125	150	160	260	16.50 x 18.00 x 15.00	83	**$ 5,377**
V1K200A01	75	150	200	200	265	16.50 x 18.00 x 15.00	93	**$ 5,598**
V1K250A01	100	200	250	250	290	16.50 x 18.00 x 15.00	93	**$ 5,710**
V1K305A01	-	250	300	305	325	16.50 x 18.00 x 30.00	117	**$ 5,740**

BRAKE RESISTORS

Product Overview

Compact design / size. Excellent load life stability and short time overload. Resistant to moisture and solvent. Self-extinguish encapsulation material. Standard lead wire length 300mm.

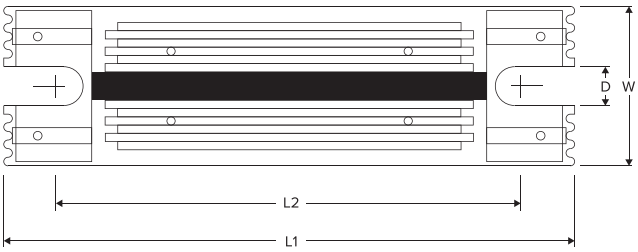


Standard Features

- Low price small size
- High power and excellent load life stability
- Excellent short time over load
- Strongly resistant to moisture & solvent
- Self-extinguish material is used in encapsulation

Technical Specifications

1. Operating Temp.	**-55°C - +275°C**
2. Insulation Resistance	**>20MW MIN**
3. Dielectric Strength	**AC1500V, 3500V, 5000V for 1 min**
4. Temp. Coefficient	**50 ppm/°C, 100 ppm/°C, 260 ppm/°C,**
5. Short Time Over Load	**10 X Wattage Rating, 5 sec**
6. Moisture Resistance	**Temp 40°C moisture 95% DC100v500h**
7. Thermal Shock	**Wattage Rating 30min. -25°C, 15min**
8. Vibration	**10c/c ~ 50 c/s ~ 10 c/s (1min) -2h each of paralleled and right angle.**
9. Load Life	**Wattage Rating 1.5 h ON, 30min OFF, 1000h**
10. Derate to Zero	**at 275°C**



			DIMENSIONS (mm)					
WATTS	OHMS	MODEL	L1	L2	W	H	D	LIST PRICE
75	25	DBEMCH7525R	140	125	40	20	4	$ 116.00
	75	DBEMCH7575R	140	125	40	20	4	$ 116.00
	100	DBEMCH75100R	140	125	40	20	4	$ 116.00
	250	DBEMCH75250R	140	125	40	20	4	$ 116.00
100	25	DBEMCH10025R	165	150	40	20	4	$ 132.00
	75	DBEMCH10075R	165	150	40	20	4	$ 132.00
	100	DBEMCH100100R	165	150	40	20	4	$ 132.00
	250	DBEMCH100250R	165	150	40	20	4	$ 132.00
150	50	DBEMCH15050R	216	200	40	20	4	$ 549.00
	75	DBEMCH15075R	216	200	40	20	4	$ 549.00
	100	DBEMCH150100R	216	200	40	20	4	$ 549.00
200	25	DBEMCH20025R	165	150	60	30	5.3	$ 198.00
	75	DBEMCH20075R	165	150	60	30	5.3	$ 198.00
	100	DBEMCH200100R	165	150	60	30	5.3	$ 198.00
300	25	DBEMCH30025R	165	150	60	30	5.3	$ 264.00
	50	DBEMCH30050R	215	200	60	30	5.3	$ 264.00
	75	DBEMCH30075R	215	200	60	30	5.3	$ 264.00
	100	DBEMCH300100R	215	200	60	30	5.3	$ 264.00
	150	DBEMCH300150R	215	200	60	30	5.3	$ 264.00
	250	DBEMCH300250R	215	200	60	30	5.3	$ 264.00
400	25	DBEMCH40025R	265	250	60	30	5.3	$ 330.00
	50	DBEMCH40050R	265	250	60	30	5.3	$ 330.00
	75	DBEMCH40075R	265	250	60	30	5.3	$ 330.00
	200	DBEMCH400200R	265	250	60	30	5.3	$ 330.00
500	25	DBEMCH50025R	330	315	60	35	5.3	$ 395.00
	50	DBEMCH50050R	330	315	60	35	5.3	$ 395.00
	75	DBEMCH50075R	330	315	60	35	5.3	$ 395.00
	100	DBEMCH500100R	330	315	60	35	5.3	$ 395.00
	250	DBEMCH500250R	330	315	60	35	5.3	$ 395.00
750	75	DBEMCH75075R	330	315	80	35	5.3	$ 593.00
	100	DBEMCH750100R	330	315	80	35	5.3	$ 593.00
	250	DBEMCH750250R	330	315	80	35	5.3	$ 593.00
1000	75	DBEMCH100075R	415	400	80	35	5.3	$ 659.00
	100	DBEMCH1000100R	415	400	80	35	5.3	$ 659.00
	250	DBEMCH1000250R	415	400	80	35	5.3	$ 659.00

INDUCTIVE ABSORBER KITS & INDIVIDUAL PIECES

CoolBLUE® & NaLA®

Product Overview

CoolBLUE® toroids made from the nanocrystalline material NANOPERM® are being used increasingly to reduce damaging motor bearing currents in modern high power inverter systems operating at high switching frequencies. As a result of these unwanted currents, the bearings corrugate, leading to electrical breakdown in the lubrication and finally to a standstill of the entire motor.

The use of CoolBLUE® cores not only significantly reduces the over voltage peaks at the motor terminals, but also suppresses the asymmetrical EMI currents which are generated by the parasitic capacities of the motor itself together with the motor cable. In order to achieve an efficient reduction in these destructive effects, one or more CoolBLUE® cores of suitable geometry have to be placed together over the connector cables in the DC-link as well as at the inverter output. In this configuration, the cores operate as a common-mode choke.

Part Numbering For Individual Pieces

CBO	43	HP	1/4-50	A4
1	2	3	4	5

NO.	DESCRIPTION	DETAILED CONTENT
1	Series	**CBO** - CoolBLUE Oval Shaped **CBR** - CoolBLUE Round Shaped
2	Internal Diameter (mm)	--
3	Horsepower	--
4	1/4-50 HP Rated VFD/Motor	--
5	Saturation Current Rating, 4 Amps	--

Part Numbering For Kits

OKIT	.0-1HP	150
1	2	3

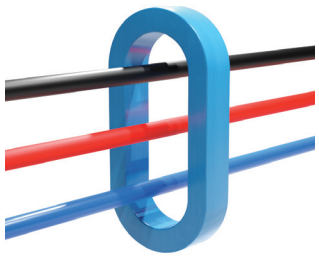
NO.	DESCRIPTION	DETAILED CONTENT
1	Oval Coolblue/ Nala Kit	--
2	Application Horsepower Range	--
3	Cable Length From VFD To Motor	Measured in Feet (FT)

CoolBLUE® & NaLA® Individual Piece Purchasing Data

CoolBLUE®

PIECE MODEL #	SHAPE	LIST PRICE	VFD HP RANGE	NUMBER OF CORES REQUIRED PER MOTOR — CABLE LENGTH (FT) 1-150FT	151-300FT	301-450FT	451-900FT
CBO43HP1/4-50A4	OVAL	**$ 95**	1/4 to 10	2	4	6	8
CBR37HP1/4-50A5	ROUND	**$119**		2	4	6	8
CBO43HP1/4-50A4	OVAL	**$ 95**	11 to 50	4	4	6	8
CBR37HP1/4-50A5	ROUND	**$119**		4	4	6	8
CBO68HP51-100A6	OVAL	**$ 260**	51 to 100	4	4	6	8
CBO155HP101-428A12	OVAL	**$ 745**	101 to 428	4	4	6	8
CBR166HP429-1631A16	ROUND	**$ 1,666**	429 to 1631	4	4	6	8
CBO326HP1632+A23	OVAL	**$ 3,645**	1632 and over	4	4	6	8

CoolBLUE®

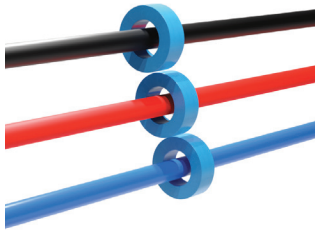


NaLA®

PIECE MODEL #	SHAPE	LIST PRICE	VFD HP RANGE	NUMBER OF CORES REQUIRED PER PHASE* — CABLE LENGTH (FT) 1-150FT	151-300FT	301-450FT	451-900FT
N18HP1/4-10	ROUND	**$ 23**	1/4 to 10	2	3	4	5
N18HP11-40	ROUND	**$ 51**	11 to 40	1	2	3	4
N29HP41-102	ROUND	**$ 83**	41 to 100	1	2	3	4
N57HP103-428	ROUND	**$ 295**	101 to 428	1	2	3	4
N75HP429-1631	ROUND	**$ 833**	429 to 1631	1	2	3	4
N123HP1632+	ROUND	**$ 1,458**	1632 and over	1	2	3	4

*Note that the NaLA pieces are installed per phase. To select the correct quantities **per motor**, you must multiply the numbers above by 3

NaLA®



CoolBLUE® & NaLA® Kit Purchasing Data

Pre-packaged Kits with Detailed Installation Instructions, Accessories and Stickers.

HP	MOTOR CABLE LENGTH (FT)	KIT MODEL #	DESCRIPTION	LIST PRICE
0-1HP	0-150FT	**OKIT.0-1HP-150**	COOLBLUE KIT 0-1HP 0-150FT OF CABLE	**$236**
	151-300FT	**OKIT.0-1HP-300**	COOLBLUE KIT 0-1HP 151-300FT OF CABLE	**$434**
	301-450FT	**OKIT.0-1HP-450**	COOLBLUE KIT 0-1HP 301-450FT OF CABLE	**$509**
	451FT+	**OKIT.0-1HP-451+**	COOLBLUE KIT 0-1HP 451FT+ OF CABLE	**$584**
1.1-10HP	0-150FT	**OKIT1.1-10HP-150**	COOLBLUE KIT 1.1-10HP 0-150FT OF CABLE	**$399**
	151-300FT	**OKIT1.1-10HP-300**	COOLBLUE KIT 1.1-10HP 151-300FT OF CABLE	**$687**
	301-450FT	**OKIT1.1-10HP-450**	COOLBLUE KIT 1.1-10HP 301-450FT OF CABLE	**$976**
	451FT+	**OKIT1.1-10HP-451+**	COOLBLUE KIT 1.1-10HP 451FT+ OF CABLE	**$1,193**
11-40HP	0-150FT	**OKIT11-40HP-150**	COOLBLUE KIT 11-40HP 0-150FT OF CABLE	**$629**
	151-300FT	**OKIT11-40HP-300**	COOLBLUE KIT 11-40HP 151-300FT OF CABLE	**$788**
	301-450FT	**OKIT11-40HP-450**	COOLBLUE KIT 11-40HP 301-450FT OF CABLE	**$1,163**
	451FT+	**OKIT11-40HP-451+**	COOLBLUE KIT 11-40HP 451FT+ OF CABLE	**$1,538**
41-50HP	0-150FT	**OKIT41-50HP-150**	COOLBLUE KIT 41-50HP 0-150FT OF CABLE	**$706**
	151-300FT	**OKIT41-50HP-300**	COOLBLUE KIT 41-50HP 151-300FT OF CABLE	**$943**
	301-450FT	**OKIT41-50HP-450**	COOLBLUE KIT 41-50HP 301-450FT OF CABLE	**$1,395**
	451FT+	**OKIT41-50HP-451+**	COOLBLUE KIT 41-50HP 451FT+ OF CABLE	**$1,847**
51-100HP	0-150FT	**OKIT51-100HP-150**	COOLBLUE KIT 51-100HP 0-150FT OF CABLE	**$1,564**
	151-300FT	**OKIT51-100HP-300**	COOLBLUE KIT 51-100HP 151-300FT OF CABLE	**$1,800**
	301-450FT	**OKIT51-100HP-450**	COOLBLUE KIT 51-100HP 301-450FT OF CABLE	**$2,617**
	451FT+	**OKIT51-100HP-451+**	COOLBLUE KIT 51-100HP 451FT+ OF CABLE	**$3,435**
101-428HP	0-150FT	**OKIT101-428HP-150**	COOLBLUE KIT 101-428HP 0-150FT OF CABLE	**$4,097**
	151-300FT	**OKIT101-428HP-300**	COOLBLUE KIT 101-428HP 151-300FT OF CABLE	**$4,972**
	301-450FT	**OKIT101-428HP-450**	COOLBLUE KIT 101-428HP 301-450FT OF CABLE	**$7,375**
	451FT+	**OKIT101-428HP-451+**	COOLBLUE KIT 101-428HP 451FT+ OF CABLE	**$9,778**

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