

#### DG1 General Purpose Drive

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### PowerXL DG1 Series Drives

#### Product Description

The DG1 general purpose drives are part of Eaton's next generation PowerXL Series of adjustable frequency drives specifically engineered for today's more demanding commercial and industrial applications. The power unit makes use of the most sophisticated semiconductor technology and a highly modular construction that can be flexibly adapted to meet the customer's needs.

The control module was designed to include today's standard communication protocols and I/O while still having the modularity to add additional option cards.

Eaton's patented Active Energy Control is also a standard feature on DG1 drives, offering customers increased efficiency, safety and reliability.

These drives continue the tradition of robust performance and raise the bar on features and functionality, ensuring the best solution at the right price.

#### Product Range

230 V to 125 hp, 312 A, 90 kW

480 V to 1000 hp, 1180 A, 630 kW

575 V to 800 hp, 820 A, 597 kW

#### Features and Benefits

##### Hardware

- Brake chopper standard on Frames 0, 1, 2, 3
- Dual overload ratings
  - 110% variable torque ( $I_L$ )
  - 150% constant torque ( $I_H$ )
- Open Type/IP00 or IP20 or Type 1/IP21 or Type 12/IP54 enclosures available
- Integrated common mode reduction 5% DC link choke with input surge protection
- EMI/RFI filters standard on all drives—meets EMC Category C2
- Real-time clock—supports calendaring and PLC functionality
- Graphic LCD display and keypad—supports simple menu navigation as well as on-screen diagnostics and troubleshooting
- LOCAL/REMOTE operation from keypad and two configurable soft keys
- Conformal coated control and power boards standard

- Control logic can be powered from an external auxiliary control panel—internal drive functions and fieldbus if necessary
- Standard I/O:
  - 8DI, 1DO
  - 2AI, 2AO
  - 2FC, 1FA relays
- Standard communications:
  - EtherNet/IP, Modbus TCP
  - RS-485: Modbus RTU, BACnet MS/TP
- Seamless integration into EtherNet/IP networks via EIP-Assist I/O tag-generation tool
- Two expansion slots—intended to support additional I/O or communication protocols as necessary
- Quick disconnect terminals for I/O connections—supports fast easy installation
- Safe Torque Off (STO) built-in with functional safety SIL1 certification

##### Software

- Active energy control—minimizes energy losses in your motor, resulting in industry-leading energy efficiency for your application
- Quick Start Wizard upon initial power-up supports fast, easy installation
- Standard applications:
  - Standard
  - Multi-pump and fan Control
  - Multi-PID
  - Multi-purpose
- Copy/paste functionality on drive keypad—allows for fast setup of multiple drives
- Pre-programmed I/O—supports fast, easy installation for most applications
- Dynamic motor regenerative energy management
- Advanced PC Tool with diagnostic capabilities
- Two keypad software keys for easy menu navigation and shortcuts

### Standards and Certifications

#### Product

- IEC/EN 61800-5-1
- IEC/EN 61800-5-2
- UL 508C
- IEC 61508
- EN 62061
- EN ISO 13849-1

#### EMC

- Immunity: IEC/EN 61800-3
- Category C2

#### Certification

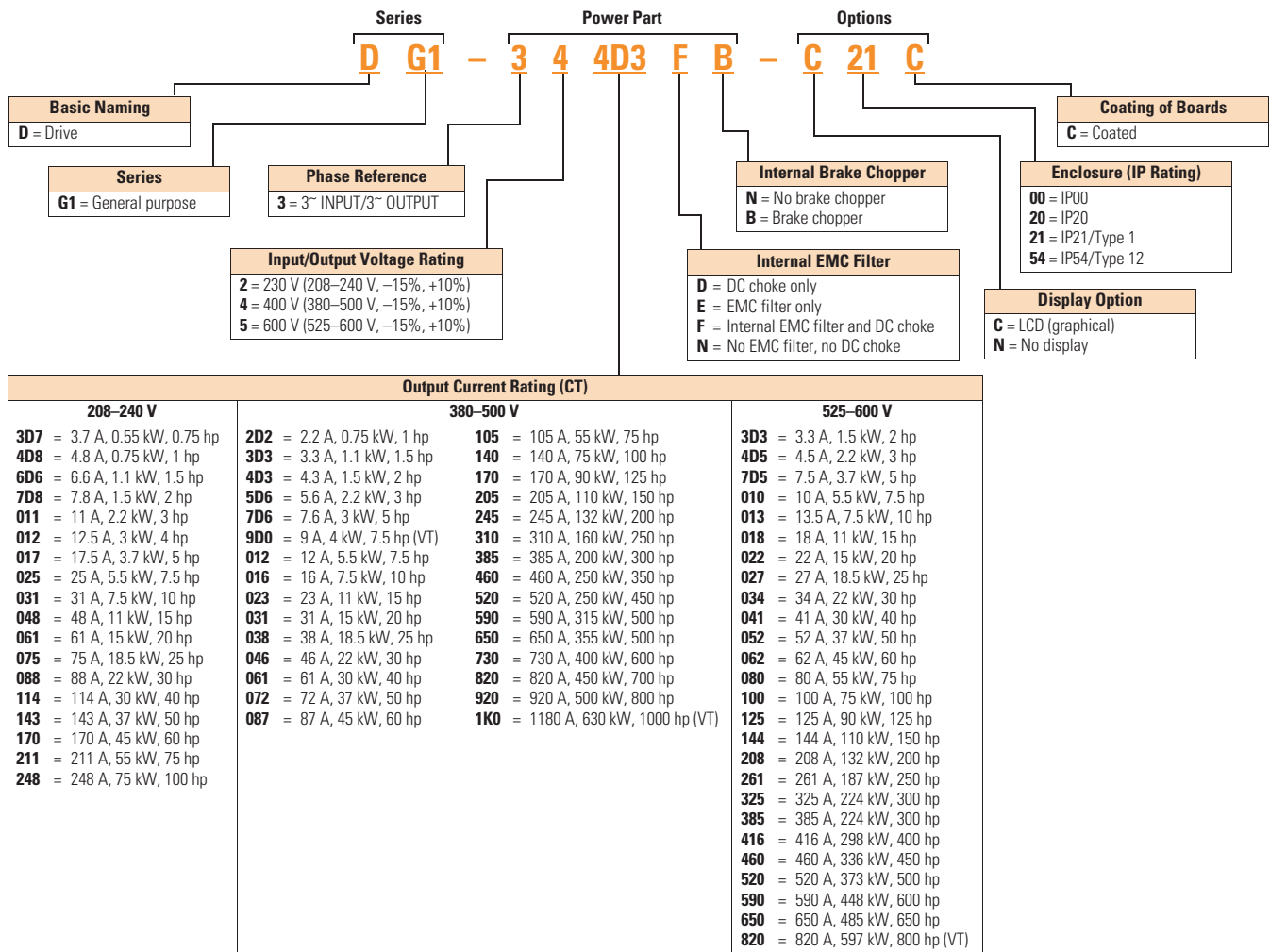
- UL
- cUL
- CE
- C-Tick
- RoHS
- EAC
- Plenum rated



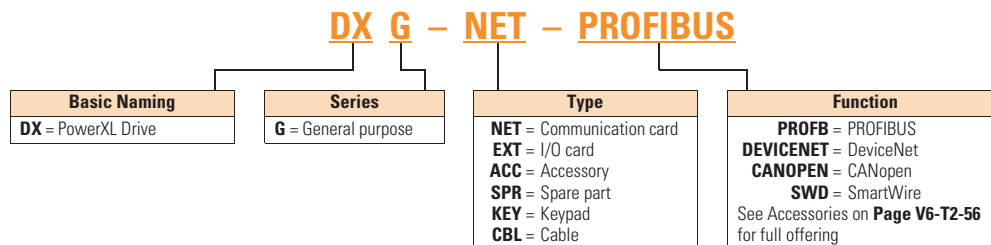
### Catalog Number Selection

Catalog Number Selection is for illustrative purposes only and not to be used to create new catalog numbers.

#### PowerXL Series—DG1 General Purpose Drive



#### PowerXL Series—DG1 General Purpose Drive Option Boards



# 2.6

## Adjustable Frequency Drives

### PowerXL DG1 Series Drives

#### Product Selection

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#### DG1 Series Drives—208–240 Volt

##### PowerXL Series—DG1

##### IP20



Frame Size	Constant Torque (CT) / High Overload (I <sub>H</sub> )			Variable Torque (VT) / Low Overload (I <sub>L</sub> )			Catalog Number
	230 V, 50 Hz kW Rating	230 V, 60 Hz hp	Current A	230 V, 50 Hz kW Rating	230 V, 60 Hz hp	Current A	
FR0	0.55	0.75	3.7	0.75	1	4.8	DG1-323D7EB-C20C
	0.75	1	4.8	1.1	1.5	6.6	DG1-324D8EB-C20C
	1.1	1.5	6.6	1.5	2	7.8	DG1-326D6EB-C20C

##### PowerXL Series—DG1

##### Type 1/IP21



Frame Size	Constant Torque (CT) / High Overload (I <sub>H</sub> )			Variable Torque (VT) / Low Overload (I <sub>L</sub> )			Catalog Number
	230 V, 50 Hz kW Rating	230 V, 60 Hz hp	Current A	230 V, 50 Hz kW Rating	230 V, 60 Hz hp	Current A	
FR1	0.55	0.75	3.7	0.75	1	4.8	DG1-323D7FB-C21C
	0.75	1	4.8	1.1	1.5	6.6	DG1-324D8FB-C21C
	1.1	1.5	6.6	1.5	2	7.8	DG1-326D6FB-C21C
	1.5	2	7.8	2.2	3	11	DG1-327D8FB-C21C
	2.2	3	11	3	—	12.5	DG1-32011FB-C21C
FR2	3	—	12.5	3.7	5	17.5	DG1-32012FB-C21C
	3.7	5	17.5	5.5	7.5	25	DG1-32017FB-C21C
	5.5	7.5	25	7.5	10	31	DG1-32025FB-C21C
FR3	7.5	10	31	11	15	48	DG1-32031FB-C21C
	11	15	48	15	20	61	DG1-32048FB-C21C
FR4	15	20	61	18.5	25	75	DG1-32061FN-C21C
	18.5	25	75	22	30	88	DG1-32075FN-C21C
	22	30	88	30	40	114	DG1-32088FN-C21C
FR5	30	40	114	37	50	143	DG1-32114FN-C21C
	37	50	143	45	60	170	DG1-32143FN-C21C
	45	60	170	55	75	211	DG1-32170FN-C21C
FR6	55	75	211	75	100	261	DG1-32211FN-C21C
	75	100	248	90	125	312	DG1-32248FN-C21C

## PowerXL Series—DG1

## Type 12/IP54



Frame Size	Constant Torque (CT) / High Overload (I <sub>H</sub> )			Variable Torque (VT) / Low Overload (I <sub>L</sub> )			Catalog Number
	230 V, 50 Hz kW Rating	230 V, 60 Hz hp	Current A	230 V, 50 Hz kW Rating	230 V, 60 Hz hp	Current A	
FR1	0.55	0.75	3.7	0.75	1	4.8	DG1-323D7FB-C54C
	0.75	1	4.8	1.1	1.5	6.6	DG1-324D8FB-C54C
	1.1	1.5	6.6	1.5	2	7.8	DG1-326D6FB-C54C
	1.5	2	7.8	2.2	3	11	DG1-327D8FB-C54C
	2.2	3	11	3	—	12.5	DG1-32011FB-C54C
FR2	3	—	12.5	3.7	5	17.5	DG1-32012FB-C54C
	3.7	5	17.5	5.5	7.5	25	DG1-32017FB-C54C
	5.5	7.5	25	7.5	10	31	DG1-32025FB-C54C
FR3	7.5	10	31	11	15	48	DG1-32031FB-C54C
	11	15	48	15	20	61	DG1-32048FB-C54C
FR4	15	20	61	18.5	25	75	DG1-32061FN-C54C
	18.5	25	75	22	30	88	DG1-32075FN-C54C
	22	30	88	30	40	114	DG1-32088FN-C54C
FR5	30	40	114	37	50	143	DG1-32114FN-C54C
	37	50	143	45	60	170	DG1-32143FN-C54C
	45	60	170	55	75	211	DG1-32170FN-C54C
FR6	55	75	211	75	100	261	DG1-32211FN-C54C
	75	100	248	90	125	312	DG1-32248FN-C54C

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## Adjustable Frequency Drives

### PowerXL DG1 Series Drives

#### DG1 Series Drives—380–500 Volt

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##### PowerXL Series—DG1 IP20



Frame Size	Constant Torque (CT) / High Overload (I <sub>H</sub> )			Variable Torque (VT) / Low Overload (I <sub>L</sub> )			Catalog Number
	480 V, 50 Hz kW Rating	480 V, 60 Hz hp	Current A	480 V, 50 Hz kW Rating	480 V, 60 Hz hp	Current A	
FR0	0.75	1	2.2	1.1	1.5	3.3	DG1-342D2EB-C20C
	1.1	1.5	3.3	1.5	2	4.6	DG1-343D3EB-C20C
	1.5	2	4.3	2.2	3	5.6	DG1-344D3EB-C20C
	2.2	3	5.6	3	5	7.6	DG1-345D6EB-C20C

##### PowerXL Series—DG1 Type 1/IP21



Frame Size	Constant Torque (CT) / High Overload (I <sub>H</sub> )			Variable Torque (VT) / Low Overload (I <sub>L</sub> )			Catalog Number
	400 V, 50 Hz kW Rating	460 V, 60 Hz hp	Current A	400 V, 50 Hz kW Rating	460 V, 60 Hz hp	Current A	
FR1	0.75	1	2.2	1.1	1.5	3.3	DG1-342D2FB-C21C
	1.1	1.5	3.3	1.5	2	4.3	DG1-343D3FB-C21C
	1.5	2	4.3	2.2	3	5.6	DG1-344D3FB-C21C
	2.2	3	5.6	3	5	7.6	DG1-345D6FB-C21C
	3	5	7.6	4	—	9	DG1-347D6FB-C21C
	4	—	9	5.5	7.5	12	DG1-349D0FB-C21C
FR2	5.5	7.5	12	7.5	10	16	DG1-34012FB-C21C
	7.5	10	16	11	15	23	DG1-34016FB-C21C
	11	15	23	15	20	31	DG1-34023FB-C21C
FR3	15	20	31	18.5	25	38	DG1-34031FB-C21C
	18.5	25	38	22	30	46	DG1-34038FB-C21C
	22	30	46	30	40	61	DG1-34046FB-C21C
FR4	30	40	61	37	50	72	DG1-34061FN-C21C
	37	50	72	45	60	87	DG1-34072FN-C21C
	45	60	87	55	75	105	DG1-34087FN-C21C
FR5	55	75	105	75	100	140	DG1-34105FN-C21C
	75	100	140	90	125	170	DG1-34140FN-C21C
	90	125	170	110	150	205	DG1-34170FN-C21C
FR6	110	150	205	132	200	261	DG1-34205FN-C21C
	132	200	245	160	250	310	DG1-34245FN-C21C

## PowerXL Series—DG1

## Type 12/IP54



Frame Size	Constant Torque (CT) / High Overload (I <sub>H</sub> )			Variable Torque (VT) / Low Overload (I <sub>L</sub> )			Catalog Number
	400 V, 50 Hz kW Rating	460 V, 60 Hz hp	Current A	400 V, 50 Hz kW Rating	460 V, 60 Hz hp	Current A	
FR1	0.75	1	2.2	1.1	1.5	3.3	DG1-342D2FB-C54C
	1.1	1.5	3.3	1.5	2	4.3	DG1-343D3FB-C54C
	1.5	2	4.3	2.2	3	5.6	DG1-344D3FB-C54C
	2.2	3	5.6	3	5	7.6	DG1-345D6FB-C54C
	3	5	7.6	4	—	9	DG1-347D6FB-C54C
	4	—	9	5.5	7.5	12	DG1-349D0FB-C54C
FR2	5.5	7.5	12	7.5	10	16	DG1-34012FB-C54C
	7.5	10	16	11	15	23	DG1-34016FB-C54C
	11	15	23	15	20	31	DG1-34023FB-C54C
FR3	15	20	31	18.5	25	38	DG1-34031FB-C54C
	18.5	25	38	22	30	46	DG1-34038FB-C54C
	22	30	46	30	40	61	DG1-34046FB-C54C
FR4	30	40	61	37	50	72	DG1-34061FN-C54C
	37	50	72	45	60	87	DG1-34072FN-C54C
	45	60	87	55	75	105	DG1-34087FN-C54C
FR5	55	75	105	75	100	140	DG1-34105FN-C54C
	75	100	140	90	125	170	DG1-34140FN-C54C
	90	125	170	110	150	205	DG1-34170FN-C54C
FR6	110	150	205	132	200	261	DG1-34205FN-C54C
	132	200	245	160	250	310	DG1-34245FN-C54C

## PowerXL Series—DG1

## Open Type/IP00



Frame Size	Constant Torque (CT) / High Overload (I <sub>H</sub> )			Variable Torque (VT) / Low Overload (I <sub>L</sub> )			Catalog Number
	400 V, 50 Hz kW Rating	460 V, 60 Hz hp	Current A	400 V, 50 Hz kW Rating	460 V, 60 Hz hp	Current A	
FR7	160	250	311	200	300	385	DG1-34310FN-C00C
	200	300	385	250	350	460	DG1-34385FN-C00C
	250	350	460	250	450	520	DG1-34460FN-C00C
	250	450	520	315	500	590	DG1-34520FN-C00C
	315	500	590	355	500	650	DG1-34590FN-C00C
FR8	355	500	650	400	600	730	DG1-34650FN-C00C
	400	600	730	450	700	820	DG1-34730FN-C00C
	450	700	820	500	800	920	DG1-34820FN-C00C
	500	800	920	560	900	1040	DG1-34920FN-C00C
	500	800	920	630	1000	1180	DG1-341K0FN-C00C

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## Adjustable Frequency Drives

### PowerXL DG1 Series Drives

#### DG1 Series Drives—575 Volt

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#### PowerXL Series—DG1

#### Type 1/IP21



Frame Size	Constant Torque (CT) / High Overload (I <sub>H</sub> )			Variable Torque (VT) / Low Overload (I <sub>L</sub> )			Catalog Number
	575 V, 60 Hz kW Rating	575 V, 60 Hz hp	Current A	575 V, 60 Hz kW Rating	575 V, 60 Hz hp	Current A	
FR1	1.5	2	3.3	2.2	3	4.5	DG1-353D3FB-C21C
	2.2	3	4.5	3.7	5	7.5	DG1-354D5FB-C21C
	3.7	5	7.5	5.5	7.5	10	DG1-357D5FB-C21C
FR2	5.5	7.5	10	7.5	10	13.5	DG1-35010FB-C21C
	7.5	10	13.5	11	15	18	DG1-35013FB-C21C
	11	15	18	15	20	22	DG1-35018FB-C21C
FR3	15	20	22	18.5	25	27	DG1-35022FB-C21C
	18.5	25	27	22	30	34	DG1-35027FB-C21C
	22	30	34	30	40	41	DG1-35034FB-C21C
FR4	30	40	41	37	50	52	DG1-35041FN-C21C
	37	50	52	45	60	62	DG1-35052FN-C21C
	45	60	62	55	75	80	DG1-35062FN-C21C
FR5	55	75	80	75	100	100	DG1-35080FN-C21C
	75	100	100	90	125	125	DG1-35100FN-C21C
	90	125	125	110	150	144	DG1-35125FN-C21C
FR6	110	150	144	150	200	208	DG1-35144FN-C21C
	132	200	208	187	250	250	DG1-35208FN-C21C

#### PowerXL Series—DG1

#### Type 12/IP54



Frame Size	Constant Torque (CT) / High Overload (I <sub>H</sub> )			Variable Torque (VT) / Low Overload (I <sub>L</sub> )			Catalog Number
	575 V, 60 Hz kW Rating	575 V, 60 Hz hp	Current A	575 V, 60 Hz kW Rating	575 V, 60 Hz hp	Current A	
FR1	1.5	2	3.3	2.2	3	4.5	DG1-353D3FB-C54C
	2.2	3	4.5	3.7	5	7.5	DG1-354D5FB-C54C
	3.7	5	7.5	5.5	7.5	10	DG1-357D5FB-C54C
FR2	5.5	7.5	10	7.5	10	13.5	DG1-35010FB-C54C
	7.5	10	13.5	11	15	18	DG1-35013FB-C54C
	11	15	18	15	20	22	DG1-35018FB-C54C
FR3	15	20	22	18.5	25	27	DG1-35022FB-C54C
	18.5	25	27	22	30	34	DG1-35027FB-C54C
	22	30	34	30	40	41	DG1-35034FB-C54C
FR4	30	40	41	37	50	52	DG1-35041FN-C54C
	37	50	52	45	60	62	DG1-35052FN-C54C
	45	60	62	55	75	80	DG1-35062FN-C54C
FR5	55	75	80	75	100	100	DG1-35080FN-C54C
	75	100	100	90	125	125	DG1-35100FN-C54C
	90	125	125	110	150	144	DG1-35125FN-C54C
FR6	110	150	144	150	200	208	DG1-35144FN-C54C
	132	200	208	187	250	250	DG1-35208FN-C54C

## PowerXL Series—DG1

## Open Type/IP00



Frame Size	Constant Torque (CT) / High Overload (I <sub>H</sub> )			Variable Torque (VT) / Low Overload (I <sub>L</sub> )			Catalog Number
	575 V, 60 Hz kW Rating	575 V, 60 Hz hp	Current A	575 V, 60 Hz kW Rating	575 V, 60 Hz hp	Current A	
FR7	186.5	250	261	223.8	300	325	DG1-35261FN-C00C
	223.8	300	325	298.4	400	385	DG1-35325FN-C00C
	223.8	300	385	335.7	450	416	DG1-35385FN-C00C
FR8	298.4	400	416	335.7	450	460	DG1-35416FN-C00C
	335.7	450	460	373	500	520	DG1-35460FN-C00C
	373	500	520	447.6	600	590	DG1-35520FN-C00C
	447.6	600	590	484.9	650	650	DG1-35590FN-C00C
	484.9	650	650	522.2	700	750	DG1-35650FN-C00C
	484.9	650	650	596.8	800	820	DG1-35820FN-C00C



### Accessories

The PowerXL Series—DG1 drives can accommodate a wide selection of expander and adapter option boards to customize the drive for your application needs. The drive's control unit is designed to accept a total of two additional option boards.

The PowerXL Series—DG1 drives come with a factory-installed standard board configuration including the following:

- Standard I/O:
  - 8DI, 1DO
  - 2AI, 2AO
  - 2FC, 1FA relays
- Standard communications:
  - EtherNet/IP, Modbus TCP
  - RS-485: Modbus RTU, BACnet MS/TP

### PowerXL Series—DG1 I/O Card Kits

Description	Catalog Number
3 x DI, 3 x DO, 1 x thermistor, 24 Vdc/EXT option card	<b>DXG-EXT-3DI3DO1T</b>
1 x AI, 2 x AO (isolated to control board) option card	<b>DXG-EXT-1AI2AO</b>
3 x relay dry contact (2NO + 1NO/NC) option card	<b>DXG-EXT-3R0</b>
3 x PT100 RTD thermistor input option card	<b>DXG-EXT-THER1</b>
6 x DI 240 Vac input option card	<b>DXG-EXT-6DI</b>

### PowerXL Series—DG1 Communication Card Kits

Description	Catalog Number
PROFIBUS-DP communication card	<b>DXG-NET-PROFB</b>
CANopen communication card	<b>DXG-NET-CANOPEN</b>
DeviceNet communication card	<b>DXG-NET-DEVICENET</b>
PROFIBUS DB9 to 5-pin adapter card	<b>DXG-NET-PROAD</b>
SmartWire communication card and module IP20	<b>DXG-NET-SWD-IP20</b>
SmartWire communication card and module IP54	<b>DXG-NET-SWD-IP54</b>

### PowerXL Series—DG1 Keypad Kits

Description	Catalog Number
Standard keypad	<b>DXG-KEY-LCD</b>
Remote keypad kit (IP 54 rated keypad holder and 3 m cable)	<b>DXG-KEY-RMTKIT</b>
1 m remote keypad cable	<b>DXG-CBL-1M0</b>
3 m remote keypad cable	<b>DXG-CBL-3M0</b>
Remote keypad mounting holder only	<b>DXG-KEY-HOLDER</b>
Type 12/IP54 keypad hole plug (maintain rating without keypad)	<b>DXG-KEY-N12PLUG</b>

### PowerXL Series—DG1 Conversion and Flange Kits

The Type 12/IP54 option kit is used to convert a Type 1/IP21 to a Type 12/IP54 drive. The kit includes cover, fan and grommets.

#### Type 12/IP54 Conversion Kits <sup>①</sup>

Description	Catalog Number
Frame 1 230 V Type 12/IP54 kit	<b>DXG-ACC-2FR1N12KIT</b>
Frame 1 480 V Type 12/IP54 kit	<b>DXG-ACC-4FR1N12KIT</b>
Frame 2 Type 12/IP54 kit	<b>DXG-ACC-FR2N12KIT</b>

The flange kit is used when the power section heat sink is mounted through the back panel of an enclosure. The kit includes hardware, top flange plate, bottom flange plate and two side flange plates.

#### Flange Kits

Description	Catalog Number
Frame 1 flange kit Type 12/IP54	<b>DXG-ACC-FR1N12FK</b>
Frame 2 flange kit Type 12/IP54	<b>DXG-ACC-FR2N12FK</b>
Frame 3 flange kit Type 12/IP54	<b>DXG-ACC-FR3N12FK</b>
Frame 4 flange kit Type 12/IP54	<b>DXG-ACC-FR4N12FK</b>
Frame 5 flange kit Type 12/IP54	<b>DXG-ACC-FR5N12FK</b>
Frame 6 flange kit Type 12/IP54	<b>DXG-ACC-FR6N12FK</b>

### PowerXL Series—DG1 Demo Units

#### Demo Units

Description	Catalog Number
DG1 control module demo stand	<b>DG1-DEMO1</b>
DG1 full drive demo case	<b>DG1-DEMO2</b>

#### Note

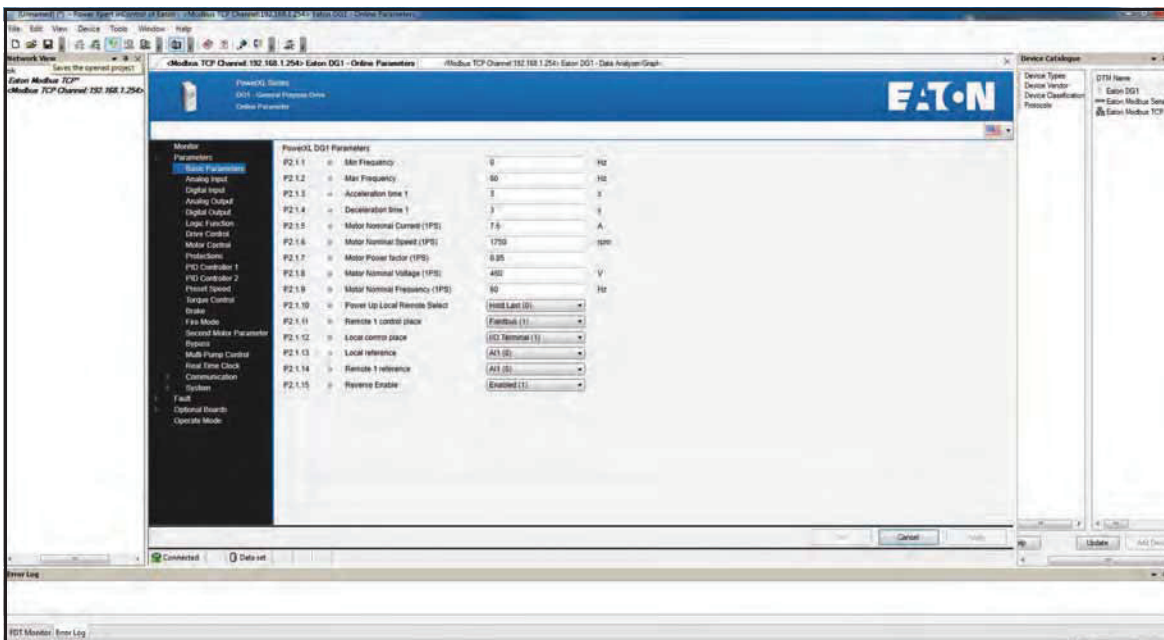
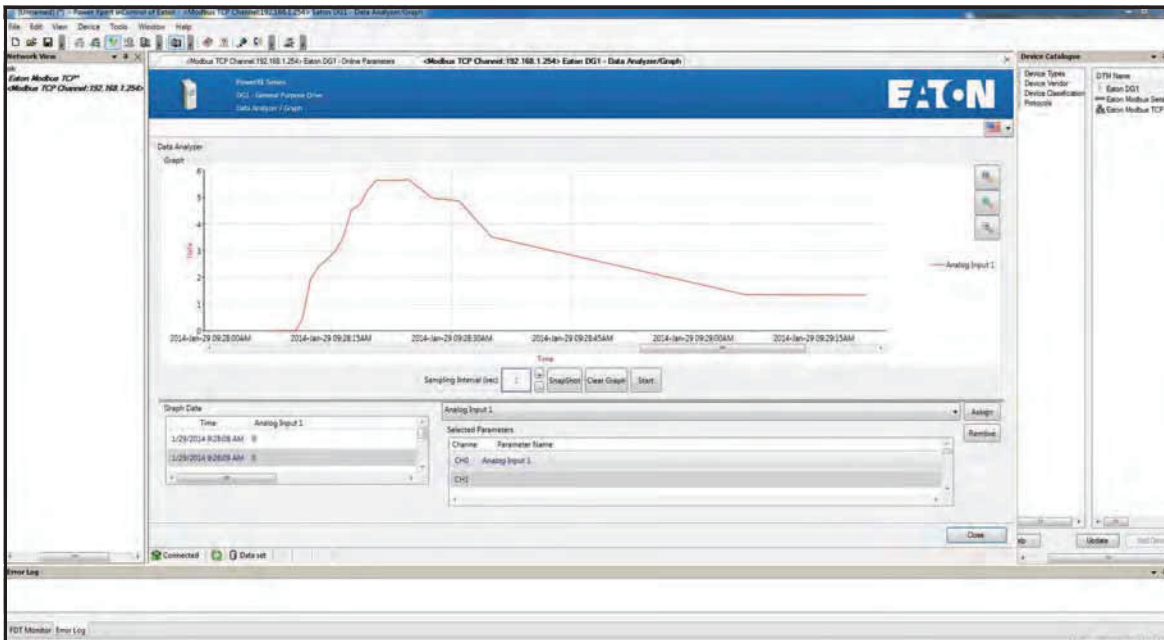
<sup>①</sup> NEMA 12 DG1 drives from W34 are available within 3 business days.

### Power Xpert *inControl* Software

The PowerXL Series PC Tool is designed for programming, controlling and monitoring of the DG1 drives. Features include loading parameters that can be saved to a file or printed, setting references, starting and stopping the motor, monitoring signals in graphical or text form, and real-time display.

#### PowerXpert *inControl* Software

Description	Catalog Number
Software kit (software, cable, manual)	<b>DXG-ACC-SOFTWARE</b>
Software cable (USB to keypad [RJ45])	<b>DXG-CBL-PCCABLE</b>
Real-time clock battery (approximately 10,000 hours life)	<b>DXG-ACC-RTBATT</b>



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## Adjustable Frequency Drives

### PowerXL DG1 Series Drives

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#### Brake Chopper Options

The brake chopper circuit option is used for applications that require dynamic braking. Dynamic braking resistors are not included with drive purchase. Consult the factory for additional dynamic braking resistor selections that are supplied separately. A list of common resistors are listed below and are complete indoor assemblies, include a pre-wired terminal block and a thermal switch, and are not UL Listed.

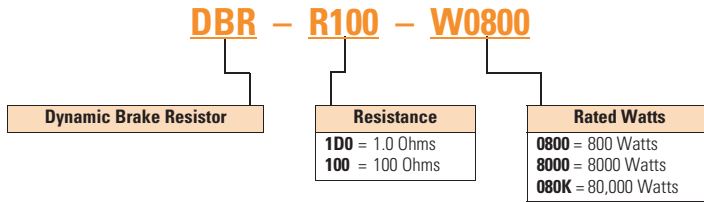
#### Duty Cycle

The duty cycle rating is based on a 60-second period. For example, the 20% duty cycle resistor can carry 100% current for 12 seconds out of every 60 seconds, while the 50% duty cycle resistor can carry 150% current for 30 seconds out of every 60 seconds.

#### Torque

If the braking torque required is less than 15%, dynamic braking is not required because the regenerated energy will be dissipated in the drive and motor losses.

#### Dynamic Brake Resistor—Catalog Number Selection



#### 230 V Brake Resistors

Drive hp (CT/I <sub>H</sub> )	Minimum Ohms	20% Duty Cycle, 100% Torque		50% Duty Cycle, 150% Torque	
		Catalog Number	Dimensions (Inches)	Catalog Number	Dimensions (Inches)
0.75	30.0	DBR-R100-W0400	12W x 5D x 5H	DBR-R100-W0800	12W x 7D x 5H
1	30.0	DBR-R100-W0400	12W x 5D x 5H	DBR-R100-W0800	12W x 7D x 5H
1.5	30.0	DBR-R100-W0400	12W x 5D x 5H	DBR-R036-W1200	12W x 10D x 5H
2	30.0	DBR-R100-W0400	12W x 5D x 5H	DBR-R036-W1200	12W x 10D x 5H
3	30.0	DBR-R036-W0800	12W x 7D x 5H	DBR-R036-W2000	12W x 16D x 5H
4	30.0	DBR-R036-W0800	12W x 7D x 5H	DBR-R030-W2400	19W x 10D x 5H
5	30.0	DBR-R036-W0800	12W x 7D x 5H	DBR-R030-W2800	19W x 13D x 5H
7.5	20.0	DBR-R020-W1200	12W x 10D x 5H	DBR-R020-W4800	26.5W x 13D x 5H
10	10.0	DBR-R015-W1600	12W x 13D x 5H	DBR-R112-W6000	26.5W x 13D x 5H
15	10.0	DBR-R012-W2400	19W x 10D x 5H	DBR-R010-W9000	28W x 10D x 10H
20	3.3	DBR-R9D3-W3200	19W x 10D x 5H	DBR-R3D4-W012K	28W x 10D x 10H
25	3.3	DBR-R5D5-W4000	26.5W x 10D x 5H	DBR-R5D1-W015K	28W x 16D x 10H
30	3.3	DBR-R4D8-W4800	26.5W x 10D x 5H	DBR-R4D1-W020K	28W x 16D x 10H
40	1.4	DBR-R004-W6000	26.5W x 13D x 5H	DBR-R3D4-W025K	30W x 18D x 16H
50	1.4	DBR-R3D1-W7500	26.5W x 16D x 5H	DBR-R2D1-W030K	30W x 18D x 24H
60	1.4	DBR-R2D8-W9000	26.5W x 16D x 5H	DBR-R002-W036K	30W x 18D x 24H
75	1.4	DBR-R2D6-W012K	28W x 10D x 10H	DBR-R1D5-W045K	30W x 18D x 32H
100	1.4	DBR-R002-W015K	28W x 16D x 10H	DBR-R1D4-W060K	30W x 18D x 40H

## 480 V Brake Resistors

Drive hp (CT/1 $\frac{1}{2}$ )	Minimum Ohms	20% Duty Cycle, 100% Torque		50% Duty Cycle, 150% Torque	
		Catalog Number	Dimensions (Inches)	Catalog Number	Dimensions (Inches)
1	63.0	<b>DBR-R100-W0400</b>	12W x 5D x 5H	<b>DBR-R100-W0800</b>	12W x 7D x 5H
1.5	63.0	<b>DBR-R100-W0400</b>	12W x 5D x 5H	<b>DBR-R100-W1200</b>	12W x 10D x 5H
2	63.0	<b>DBR-R100-W0400</b>	12W x 5D x 5H	<b>DBR-R100-W1200</b>	12W x 10D x 5H
3	63.0	<b>DBR-R100-W0800</b>	12W x 7D x 5H	<b>DBR-R100-W2000</b>	12W x 16D x 5H
5	63.0	<b>DBR-R100-W0800</b>	12W x 7D x 5H	<b>DBR-R100-W2800</b>	19W x 13D x 5H
6	63.0	<b>DBR-R100-W1200</b>	12W x 10D x 5H	<b>DBR-R070-W4000</b>	19W x 16D x 5H
7.5	63.0	<b>DBR-R100-W1200</b>	12W x 10D x 5H	<b>DBR-R063-W4800</b>	26.5W x 13D x 5H
10	63.0	<b>DBR-R063-W1600</b>	12W x 13D x 5H	<b>DBR-R063-W6000</b>	26.5W x 16D x 5H
15	42.0	<b>DBR-R042-W2400</b>	19W x 10D x 5H	<b>DBR-R042-W9000</b>	28W x 10D x 10H
20	21.0	<b>DBR-R030-W3200</b>	19W x 13D x 5H	<b>DBR-R023-W012K</b>	28W x 13D x 10H
25	21.0	<b>DBR-R030-W4000</b>	19W x 16D x 5H	<b>DBR-R021-W015K</b>	28W x 13D x 10H
30	14.0	<b>DBR-R020-W4800</b>	26.5W x 13D x 5H	<b>DBR-R014-W020K</b>	30W x 18D x 24H
40	6.5	<b>DBR-R112-W6000</b>	26.5W x 13D x 5H	<b>DBR-R007-W025K</b>	30W x 18D x 16H
50	6.5	<b>DBR-R013-W7500</b>	26.5W x 16D x 5H	<b>DBR-R8D5-W030K</b>	30W x 18D x 24H
60	6.5	<b>DBR-R010-W9000</b>	28W x 10D x 10H	<b>DBR-R7D3-W036K</b>	30W x 18D x 24H
75	3.3	<b>DBR-R009-W012K</b>	28W x 13D x 10H	<b>DBR-R3D3-W045K</b>	30W x 18D x 32H
100	3.3	<b>DBR-R5D1-W015K</b>	28W x 16D x 10H	<b>DBR-R004-W060K</b>	30W x 18D x 40H
125	3.3	<b>DBR-R4D1-W020K</b>	28W x 16D x 10H	<b>DBR-R004-W070K</b>	30W x 18D x 48H
150	3.3	<b>DBR-R3D4-W025K</b>	30W x 18D x 16H	<b>DBR-R3D5-W085K</b>	30W x 18D x 56H
200	3.3	<b>DBR-R3D3-W030K</b>	30W x 18D x 24H	<b>DBR-R3D3-W110K</b>	30W x 18D x 72H
250	1.4	<b>DBR-R2D5-W036K</b>	30W x 18D x 24H	①	—
300	1.4	<b>DBR-R1D5-W045K</b>	30W x 18D x 32H	①	—
350	1.4	<b>DBR-R1D4-W060K</b>	30W x 18D x 40H	①	—
400	0.9	<b>DBR-R1D4-W060K</b>	30W x 18D x 40H	①	—
500	0.9	<b>DBR-R0D9-W080K</b>	30W x 18D x 48H	①	—
550	0.9	<b>DBR-R001-W085K</b>	30W x 18D x 56H	①	—

**Note**

① Consult factory.

# 2.6

## Adjustable Frequency Drives

### PowerXL DG1 Series Drives

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#### 575 V Brake Resistors

Drive hp (CT/l <sub>H</sub> )	Minimum Ohms	20% Duty Cycle, 100% Torque		50% Duty Cycle, 150% Torque	
		Catalog Number	Dimensions (Inches)	Catalog Number	Dimensions (Inches)
2	100.0	<b>DBR-R100-W0400</b>	12W x 5D x 5H	<b>DBR-R100-W1200</b>	12W x 10D x 5H
3	100.0	<b>DBR-R100-W0800</b>	12W x 7D x 5H	<b>DBR-R100-W2000</b>	12W x 16D x 5H
4	100.0	<b>DBR-R100-W0800</b>	12W x 7D x 5H	<b>DBR-R100-W2400</b>	19W x 10D x 5H
5	100.0	<b>DBR-R100-W0800</b>	12W x 7D x 5H	<b>DBR-R100-W2800</b>	19W x 13D x 5H
7.5	100.0	<b>DBR-R100-W1200</b>	12W x 10D x 5H	<b>DBR-R100-W4800</b>	26.5W x 13D x 5H
10	30.0	<b>DBR-R063-W1600</b>	12W x 13D x 5H	<b>DBR-R063-W6000</b>	26.5W x 16D x 5H
15	30.0	<b>DBR-R042-W2400</b>	19W x 10D x 5H	<b>DBR-R042-W9000</b>	28W x 10D x 10H
20	30.0	<b>DBR-R030-W3200</b>	19W x 13D x 5H	<b>DBR-R030-W012K</b>	28W x 13D x 10H
25	30.0	<b>DBR-R030-W4000</b>	19W x 16D x 5H	<b>DBR-R030-W015K</b>	28W x 16D x 10H
30	18.0	<b>DBR-R020-W4800</b>	26.5W x 13D x 5H	<b>DBR-R020-W020K</b>	30W x 18D x 16H
40	18.0	<b>DBR-R030-W6000</b>	26.5W x 16D x 5H	<b>DBR-R184-W025K</b>	30W x 18D x 16H
50	9.0	<b>DBR-R013-W7500</b>	26.5W x 16D x 5H	<b>DBR-R012-W030K</b>	30W x 18D x 24H
60	9.0	<b>DBR-R010-W9000</b>	28W x 10D x 10H	<b>DBR-R010-W036K</b>	30W x 18D x 24H
75	9.0	<b>DBR-R009-W012K</b>	28W x 13D x 10H	<b>DBR-R009-W045K</b>	30W x 18D x 24H
100	7.0	<b>DBR-R013-W015K</b>	28W x 16D x 10H	<b>DBR-R8D4-W060K</b>	30W x 18D x 40H
125	7.0	<b>DBR-R8D2-W020K</b>	30W x 18D x 10H	<b>DBR-R007-W070K</b>	30W x 18D x 40H
150	7.0	<b>DBR-R007-W025K</b>	30W x 18D x 16H	<b>DBR-R006-W085K</b>	30W x 18D x 56H
175	7.0	<b>DBR-R007-W030K</b>	30W x 18D x 24H	<b>DBR-R007-W100K</b>	30W x 18D x 72H
200	2.5	<b>DBR-R3D3-W030K</b>	30W x 18D x 24H	<b>DBR-R2D6-W110K</b>	30W x 18D x 64H
250	2.5	<b>DBR-R2D5-W036K</b>	30W x 18D x 24H	<b>DBR-R003-W140K</b>	30W x 18D x 72H
300	2.5	<b>DBR-R3D3-W045K</b>	30W x 18D x 32H	①	—
400	1.7	<b>DBR-R002-W060K</b>	30W x 18D x 48H	①	—
450	1.7	<b>DBR-R1D8-W070K</b>	30W x 18D x 48H	①	—
500	1.7	<b>DBR-R002-W080K</b>	30W x 18D x 56H	①	—

**Note**

① Consult factory.

### Line and Load Reactors

A line and load reactor is a three-phase inductance filter that can be placed on the line and load side of the AFD to help improve the harmonic performance of the system. Consult the factory for additional filtering options and further technical details.

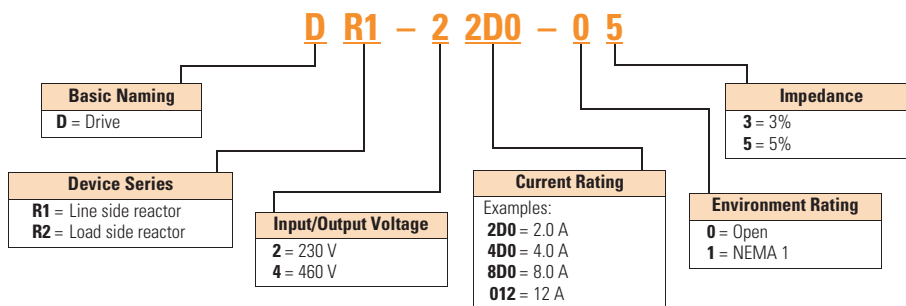
#### DR1 Line Reactor

A line reactor helps to provide a moderate reduction in current harmonics similar to a DC choke. It also provides increased input protection for AFD and its semiconductors from line transients helping to extend the life of the AFD.

#### DR2 Output Reactor

An output filter is used to reduce the transient voltage (dV/dt) at the motor terminals. The output filter is recommended for cable lengths exceeding 100 ft (30 m) with a drive of 3 hp and above and for cable lengths of 33 ft (10 m) with a drive of 2 hp and below.

### Line and Load Reactors—Catalog Number Selection



### Line and Load Reactors—230 V

hp (CT)	Open Line Reactor		Load Reactor		NEMA 1 Line Reactor		Load Reactor	
	3%	5%	3%	5%	3%	5%	3%	5%
0.75	DR1-23D2-03	DR1-23D2-05	DR2-24D0-03	DR2-24D0-05	DR1-23D2-13	DR1-23D2-15	DR2-24D0-13	DR2-24D0-15
1	DR1-24D2-03	DR1-24D2-05	DR2-24D0-03	DR2-28D0-05	DR1-24D2-13	DR1-24D2-15	DR2-24D0-13	DR2-28D0-15
1.5	DR1-26D0-03	DR1-26D0-05	DR2-28D0-03	DR2-28D0-05	DR1-26D0-13	DR1-26D0-15	DR2-28D0-13	DR2-28D0-15
2	DR1-26D8-03	DR1-26D8-05	DR2-28D0-03	DR2-28D0-05	DR1-26D8-13	DR1-26D8-15	DR2-28D0-13	DR2-28D0-15
3	DR1-29D6-03	DR1-29D6-05	DR2-2012-03	DR2-2012-05	DR1-29D6-13	DR1-29D6-15	DR2-2012-13	DR2-2012-15
5	DR1-2015-03	DR1-2015-05	DR2-2018-03	DR2-2018-05	DR1-2015-13	DR1-2015-15	DR2-2018-13	DR2-2018-15
7.5	DR1-2022-03	DR1-2022-05	DR2-2025-03	DR2-2025-05	DR1-2022-13	DR1-2022-15	DR2-2025-13	DR2-2025-15
10	DR1-2028-03	DR1-2028-05	DR2-2035-03	DR2-2035-05	DR1-2028-13	DR1-2028-15	DR2-2035-13	DR2-2035-15
15	DR1-2042-03	DR1-2042-05	DR2-2045-03	DR2-2045-05	DR1-2042-13	DR1-2042-15	DR2-2045-13	DR2-2045-15
20	DR1-2054-03	DR1-2054-05	DR2-2055-03	DR2-2055-05	DR1-2054-13	DR1-2054-15	DR2-2055-13	DR2-2055-15
25	DR1-2068-03	DR1-2068-05	DR2-2080-03	DR2-2080-05	DR1-2068-13	DR1-2068-15	DR2-2080-13	DR2-2080-15
30	DR1-2080-03	DR1-2080-05	DR2-2080-03	DR2-2100-05	DR1-2080-13	DR1-2080-15	DR2-2080-13	DR2-2100-15
40	DR1-2104-03	DR1-2104-05	DR2-2100-03	DR2-2100-05	DR1-2104-13	DR1-2104-15	DR2-2100-13	DR2-2100-15
50	DR1-2130-03	DR1-2130-05	DR2-2130-03	DR2-2130-05	DR1-2130-13	DR1-2130-15	DR2-2130-13	DR2-2130-15
60	DR1-2154-03	DR1-2154-05	DR2-2160-03	DR2-2200-15	DR1-2154-13	DR1-2154-15	DR2-2160-13	DR2-2200-15
75	DR1-2192-03	DR1-2192-05	DR2-2200-13	DR2-2200-15	DR1-2192-13	DR1-2192-15	DR2-2200-13	DR2-2200-15
100	DR1-2248-03	DR1-2248-05	DR2-2225-13	DR2-2225-15	DR1-2248-13	DR1-2248-15	DR2-2225-13	DR2-2225-15

### Line and Load Reactors—480 V

hp (CT)	Open Line Reactor	
	3%	5%
1	DR1-42D1-03	DR1-42D1-05
1.5	DR1-43D0-03	DR1-43D0-05
2	DR1-43D4-03	DR1-43D4-05
3	DR1-44D8-03	DR1-44D8-05
5	DR1-47D6-03	DR1-47D6-05
7.5	DR1-4011-03	DR1-4011-05
10	DR1-4014-03	DR1-4014-05
15	DR1-4021-03	DR1-4021-05
20	DR1-4027-03	DR1-4027-05
25	DR1-4034-03	DR1-4034-05
30	DR1-4040-03	DR1-4040-05
40	DR1-4052-03	DR1-4052-05
50	DR1-4065-03	DR1-4065-05
60	DR1-4077-03	DR1-4077-05
75	DR1-4096-03	DR1-4096-05
100	DR1-4124-03	DR1-4124-05
125	DR1-4156-03	DR1-4156-05
150	DR1-4180-03	DR1-4180-05
200	DR1-4240-03	DR1-4240-05
250	DR1-4302-03	DR1-4302-05
300	DR1-4361-03	DR1-4361-05
350	DR1-4414-03	DR1-4414-05
400	DR1-4477-03	DR1-4477-05
500	DR1-4590-03	DR1-4590-05
600	DR1-4708-03	DR1-4708-05

Load Reactor	
3%	5%
DR2-42D0-05	DR2-42D0-05
DR2-44D0-05	DR2-44D0-05
DR2-44D0-03	DR2-44D0-05
DR2-48D0-03	DR2-48D0-05
DR2-48D0-03	DR2-48D0-05
DR2-4012-03	DR2-4012-05
DR2-4018-03	DR2-4018-05
DR2-4025-03	DR2-4025-05
DR2-4025-03	DR2-4025-05
DR2-4035-03	DR2-4035-05
DR2-4045-03	DR2-4045-05
DR2-4055-03	DR2-4055-05
DR2-4080-03	DR2-4080-05
DR2-4100-03	DR2-4080-05
DR2-4100-03	DR2-4100-05
DR2-4130-03	DR2-4130-05
DR2-4160-03	DR2-4160-05
DR2-4200-13	DR2-4200-15
DR2-4250-13	DR2-4250-15
DR2-4320-13	DR2-4320-15
DR2-4400-13	DR2-4400-15
DR2-4400-13	DR2-4400-15
DR2-4500-03	DR2-4500-05
DR2-4600-03	DR2-4600-05
DR2-4750-03	DR2-4750-05

NEMA 1 Line Reactor	
3%	5%
DR1-42D1-13	DR1-42D1-15
DR1-43D0-13	DR1-43D0-15
DR1-43D4-13	DR1-43D4-15
DR1-44D8-13	DR1-44D8-15
DR1-47D6-13	DR1-47D6-15
DR1-4011-13	DR1-4011-15
DR1-4014-13	DR1-4014-15
DR1-4021-13	DR1-4021-15
DR1-4027-13	DR1-4027-15
DR1-4034-13	DR1-4034-15
DR1-4040-13	DR1-4040-15
DR1-4052-13	DR1-4052-15
DR1-4065-13	DR1-4065-15
DR1-4077-13	DR1-4077-15
DR1-4096-13	DR1-4096-15
DR1-4124-13	DR1-4124-15
DR1-4156-13	DR1-4156-15
DR1-4180-13	DR1-4180-15
DR1-4240-13	DR1-4240-15
DR1-4302-13	DR1-4302-15
DR1-4361-13	DR1-4361-15
DR1-4414-13	DR1-4414-15
DR1-4477-13	DR1-4477-15
DR1-4590-13	DR1-4590-15
DR1-4708-13	DR1-4708-15

Load Reactor	
3%	5%
DR2-42D0-13	DR2-42D0-15
DR2-44D0-13	DR2-44D0-15
DR2-44D0-13	DR2-44D0-15
DR2-48D0-13	DR2-48D0-15
DR2-48D0-13	DR2-48D0-15
DR2-4012-13	DR2-4012-15
DR2-4018-13	DR2-4018-15
DR2-4025-13	DR2-4025-15
DR2-4025-13	DR2-4025-15
DR2-4035-13	DR2-4035-15
DR2-4045-13	DR2-4045-15
DR2-4055-13	DR2-4055-15
DR2-4080-13	DR2-4080-15
DR2-4100-13	DR2-4080-15
DR2-4100-13	DR2-4100-15
DR2-4130-13	DR2-4130-15
DR2-4160-13	DR2-4160-15
DR2-4200-13	DR2-4200-15
DR2-4250-13	DR2-4250-15
DR2-4320-13	DR2-4320-15
DR2-4400-13	DR2-4400-15
DR2-4400-13	DR2-4400-15
DR2-4500-13	DR2-4500-15
DR2-4600-13	DR2-4600-15
DR2-4750-13	DR2-4750-15

### Line and Load Reactors—575 V

hp (CT)	Open Line Reactor	
	3%	5%
2	DR1-52D7-03	DR1-52D7-05
3	DR1-53D9-03	DR1-53D9-05
5	DR1-56D1-03	DR1-56D1-05
7.5	DR1-59D0-03	DR1-59D0-05
10	DR1-5011-03	DR1-5011-05
15	DR1-5017-03	DR1-5017-05
20	DR1-5022-03	DR1-5022-05
25	DR1-5027-03	DR1-5027-05
30	DR1-5032-03	DR1-5032-05
40	DR1-5041-03	DR1-5041-05
50	DR1-5052-03	DR1-5052-05
60	DR1-5062-03	DR1-5062-05
75	DR1-5077-03	DR1-5077-05
100	DR1-5100-03	DR1-5100-05
125	DR1-5125-03	DR1-5125-05
150	DR1-5144-03	DR1-5144-05
200	DR1-5192-03	DR1-5192-05
250	DR1-5242-03	DR1-5242-05
300	DR1-5289-03	DR1-5289-05
400	DR1-5382-03	DR1-5382-05
450	DR1-5412-03	DR1-5412-05
500	DR1-5472-03	DR1-5472-05
600	DR1-5576-03	DR1-5576-05

Load Reactor	
3%	5%
DR2-54D0-03	DR2-54D0-05
DR2-54D0-03	DR2-54D0-05
DR2-58D0-03	DR2-58D0-05
DR2-58D0-03	DR2-58D0-05
DR2-5012-03	DR2-5012-05
DR2-5018-03	DR2-5018-05
DR2-5025-03	DR2-5025-05
DR2-5025-03	DR2-5025-05
DR2-5035-03	DR2-5035-05
DR2-5045-03	DR2-5045-05
DR2-5055-03	DR2-5055-05
DR2-5080-03	DR2-5080-05
DR2-5080-03	DR2-5080-05
DR2-5100-03	DR2-5100-05
DR2-5130-03	DR2-5130-05
DR2-5160-03	DR2-5160-05
DR2-5200-13	DR2-5200-15
DR2-5250-13	DR2-5250-15
DR2-5320-13	DR2-5320-15
DR2-5400-13	DR2-5400-15
DR2-5400-13	DR2-5400-15
DR2-5500-03	DR2-5500-05
DR2-5600-03	DR2-5600-05

NEMA 1 Line Reactor	
3%	5%
DR1-52D7-13	DR1-52D7-15
DR1-53D9-13	DR1-53D9-15
DR1-56D1-13	DR1-56D1-15
DR1-59D0-13	DR1-59D0-15
DR1-5011-13	DR1-5011-15
DR1-5017-13	DR1-5017-15
DR1-5022-13	DR1-5022-15
DR1-5027-13	DR1-5027-15
DR1-5032-13	DR1-5032-15
DR1-5041-13	DR1-5041-15
DR1-5052-13	DR1-5052-15
DR1-5062-13	DR1-5062-15
DR1-5077-13	DR1-5077-15
DR1-5100-13	DR1-5100-15
DR1-5125-13	DR1-5125-15
DR1-5144-13	DR1-5144-15
DR1-5192-13	DR1-5192-15
DR1-5242-13	DR1-5242-15
DR1-5289-13	DR1-5289-15
DR1-5382-13	DR1-5382-15
DR1-5412-13	DR1-5412-15
DR1-5472-13	DR1-5472-15
DR1-5576-13	DR1-5576-15

Load Reactor	
3%	5%
DR2-54D0-13	DR2-54D0-15
DR2-54D0-13	DR2-54D0-15
DR2-58D0-13	DR2-58D0-15
DR2-58D0-13	DR2-58D0-15
DR2-5012-13	DR2-5012-15
DR2-5018-13	DR2-5018-15
DR2-5025-13	DR2-5025-15
DR2-5025-13	DR2-5025-15
DR2-5035-13	DR2-5035-15
DR2-5045-13	DR2-5045-15
DR2-5055-13	DR2-5055-15
DR2-5080-13	DR2-5080-15
DR2-5080-13	DR2-5080-15
DR2-5100-13	DR2-5100-15
DR2-5130-13	DR2-5130-15
DR2-5160-13	DR2-5160-15
DR2-5200-13	DR2-5200-15
DR2-5250-13	DR2-5250-15
DR2-5320-13	DR2-5320-15
DR2-5400-13	DR2-5400-15
DR2-5400-13	DR2-5400-15
DR2-5500-13	DR2-5500-15
DR2-5600-13	DR2-5600-15

## Replacement Parts

## Frame 0

Description	230 V	480 V	575 V
	Catalog Number	Catalog Number	Catalog Number
Standard keypad	DXG-KEY-LCD	DXG-KEY-LCD	—
Main control board	DXG-SPR-CTRLBOARD	DXG-SPR-CTRLBOARD	—
Control module kit with keypad <sup>①</sup>	DXG-SPR-CTRLKIT	DXG-SPR-CTRLKIT	—
Main fan kit	DXG-SPR-FR0FAN	DXG-SPR-FR0FAN	—
Main power board	DXG-SPR-2FR0MPB	DXG-SPR-4FR0MPB	—
EMI kit for C2	DXG-SPR-FR0EMCKIT	DXG-SPR-FR0EMCKIT	—

## Frame 1

Description	230 V	480 V	575 V
	Catalog Number	Catalog Number	Catalog Number
Standard keypad	DXG-KEY-LCD	DXG-KEY-LCD	DXG-KEY-LCD
Main control board	DXG-SPR-CTRLBOARD	DXG-SPR-CTRLBOARD	DXG-SPR-CTRLBOARD
Control module kit with keypad <sup>①</sup>	DXG-SPR-CTRLKIT	DXG-SPR-CTRLKIT	DXG-SPR-CTRLKIT
Control board cover	DXG-SPR-BCOVER	DXG-SPR-BCOVER	DXG-SPR-BCOVER
Standard cover	DXG-SPR-FR1CVR	DXG-SPR-FR1CVR	DXG-SPR-FR1CVR
Main fan kit <sup>①</sup>	DXG-SPR-FR1FAN	DXG-SPR-FR1FAN	DXG-SPR-FR1FAN
Control fan	DXG-SPR-2FR1CF	DXG-SPR-4FR1CF	DXG-SPR-4FR1CF
Main power board	DXG-SPR-2FR1MPB	DXG-SPR-4FR1MPB	DXG-SPR-4FR1MPB
EMI board	DXG-SPR-2FR1EB	DXG-SPR-4FR1EB	DXG-SPR-4FR1EB
Middle chassis cover	DXG-SPR-FR1MCC	DXG-SPR-FR1MCC	DXG-SPR-FR1MCC
Outer housing	DXG-SPR-FR10H	DXG-SPR-FR10H	DXG-SPR-FR10H
UL conduit plate	DXG-SPR-FR1CPUL	DXG-SPR-FR1CPUL	DXG-SPR-FR1CPUL
IEC conduit plate	DXG-SPR-FR1CPIEC	DXG-SPR-FR1CPIEC	DXG-SPR-FR1CPIEC

## Frame 2

Description	230 V	480 V	575 V
	Catalog Number	Catalog Number	Catalog Number
Standard keypad	DXG-KEY-LCD	DXG-KEY-LCD	DXG-KEY-LCD
Main control board	DXG-SPR-CTRLBOARD	DXG-SPR-CTRLBOARD	DXG-SPR-CTRLBOARD
Control module kit with keypad <sup>①</sup>	DXG-SPR-CTRLKIT	DXG-SPR-CTRLKIT	DXG-SPR-CTRLKIT
Control board cover	DXG-SPR-BCOVER	DXG-SPR-BCOVER	DXG-SPR-BCOVER
Standard cover	DXG-SPR-FR2CVR	DXG-SPR-FR2CVR	DXG-SPR-FR2CVR
Main fan kit <sup>①</sup>	DXG-SPR-FR2FAN	DXG-SPR-FR2FAN	DXG-SPR-FR2FAN
Control fan	DXG-SPR-FR2CF	DXG-SPR-FR2CF	DXG-SPR-FR2CF
Bus capacitor	DXG-SPR-2FR2BC	DXG-SPR-4FR24BC	DXG-SPR-4FR24BC
Main power board	DXG-SPR-2FR2MPB	DXG-SPR-4FR2MPB	DXG-SPR-4FR2MPB
EMI board	DXG-SPR-2FR2EB	DXG-SPR-4FR2EB	DXG-SPR-4FR2EB
Middle chassis cover	DXG-SPR-FR2MCC	DXG-SPR-FR2MCC	DXG-SPR-FR2MCC
Outer housing	DXG-SPR-FR20H	DXG-SPR-FR20H	DXG-SPR-FR20H
UL conduit plate	DXG-SPR-FR2CPUL	DXG-SPR-FR2CPUL	DXG-SPR-FR2CPUL
IEC conduit plate	DXG-SPR-FR2CPIEC	DXG-SPR-FR2CPIEC	DXG-SPR-FR2CPIEC

**Note**

<sup>①</sup> Factory recommended spare parts.



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## Adjustable Frequency Drives

### PowerXL DG1 Series Drives

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#### Frame 3

Description	230 V	480 V	575 V
	Catalog Number	Catalog Number	Catalog Number
Standard keypad	DXG-KEY-LCD	DXG-KEY-LCD	DXG-KEY-LCD
Main control board	DXG-SPR-CTRLBOARD	DXG-SPR-CTRLBOARD	DXG-SPR-CTRLBOARD
Control module kit with keypad <sup>①</sup>	DXG-SPR-CTRLKIT	DXG-SPR-CTRLKIT	DXG-SPR-CTRLKIT
Control board cover	DXG-SPR-BCOVER	DXG-SPR-BCOVER	DXG-SPR-BCOVER
Standard cover	DXG-SPR-FR3CVR	DXG-SPR-FR3CVR	DXG-SPR-FR3CVR
Main fan kit <sup>①</sup>	DXG-SPR-FR3FANKIT	DXG-SPR-FR3FANKIT	DXG-SPR-FR3FANKIT
Main fan	DXG-SPR-FR3FAN	DXG-SPR-FR3FAN	DXG-SPR-FR3FAN
Control fan	DXG-SPR-FR34CF	DXG-SPR-FR34CF	DXG-SPR-FR34CF
Bus capacitor	DXG-SPR-FR3BC	DXG-SPR-FR3BC	DXG-SPR-FR3BC
Main power board	DXG-SPR-2FR3MPB	DXG-SPR-4FR3MPB	DXG-SPR-4FR3MPB
EMI board	DXG-SPR-2FR3EB	DXG-SPR-4FR3EB	DXG-SPR-4FR3EB
Drive board	DXG-SPR-2FR3DB	DXG-SPR-4FR3DB	DXG-SPR-4FR3DB
Output board	DXG-SPR-FR3OB	DXG-SPR-FR3OB	DXG-SPR-FR3OB
Middle chassis cover	DXG-SPR-FR3MCC	DXG-SPR-FR3MCC	DXG-SPR-FR3MCC
Outer housing	DXG-SPR-FR3OH	DXG-SPR-FR3OH	DXG-SPR-FR3OH
UL conduit plate	DXG-SPR-FR3CPUL	DXG-SPR-FR3CPUL	DXG-SPR-FR3CPUL
IEC conduit plate	DXG-SPR-FR3CPIEC	DXG-SPR-FR3CPIEC	DXG-SPR-FR3CPIEC

#### Frame 4

Description	230 V	480 V	575 V
	Catalog Number	Catalog Number	Catalog Number
Standard keypad	DXG-KEY-LCD	DXG-KEY-LCD	DXG-KEY-LCD
Main control board	DXG-SPR-CTRLBOARD	DXG-SPR-CTRLBOARD	DXG-SPR-CTRLBOARD
Control module kit with keypad <sup>①</sup>	DXG-SPR-CTRLKIT	DXG-SPR-CTRLKIT	DXG-SPR-CTRLKIT
Control board cover	DXG-SPR-BCOVER	DXG-SPR-BCOVER	DXG-SPR-BCOVER
Standard cover	DXG-SPR-FR4CVR	DXG-SPR-FR4CVR	DXG-SPR-FR4CVR
Main fan kit <sup>①</sup>	DXG-SPR-FR4FANKIT	DXG-SPR-FR4FANKIT	DXG-SPR-FR4FANKIT
Main fan	DXG-SPR-FR4FAN	DXG-SPR-FR4FAN	DXG-SPR-FR4FAN
Control fan	DXG-SPR-FR34CF	DXG-SPR-FR34CF	DXG-SPR-FR34CF
Bus capacitor	DXG-SPR-2FR4BC	DXG-SPR-4FR24BC	DXG-SPR-4FR24BC
Main power board	DXG-SPR-2FR4MPB	DXG-SPR-4FR4MPB	DXG-SPR-4FR4MPB
EMI board	DXG-SPR-2FR4EB	DXG-SPR-4FR4EB	DXG-SPR-4FR4EB
Softstart board	DXG-SPR-2FR4SB	DXG-SPR-4FR4SB	DXG-SPR-4FR4SB
IGBT module	DXG-SPR-2FR4IGBT	DXG-SPR-4FR4IGBT	DXG-SPR-4FR4IGBT
Rectifier module	DXG-SPR-2FR4RM	DXG-SPR-4FR4RM	DXG-SPR-4FR4RM
Brake chopper module	DXG-SPR-2FR4BCM	DXG-SPR-4FR4BCM	DXG-SPR-4FR4BCM
Middle chassis cover	DXG-SPR-FR4MCC	DXG-SPR-FR4MCC	DXG-SPR-FR4MCC
Outer housing	DXG-SPR-FR4OH	DXG-SPR-FR4OH	DXG-SPR-FR4OH
UL conduit plate	DXG-SPR-FR4CPUL	DXG-SPR-FR4CPUL	DXG-SPR-FR4CPUL
IEC conduit plate	DXG-SPR-FR4CPIEC	DXG-SPR-FR4CPIEC	DXG-SPR-FR4CPIEC

#### Note

<sup>①</sup> Factory recommended spare parts.

## Frame 5

Description	230 V Catalog Number	480 V Catalog Number	575 V Catalog Number
Standard keypad	DXG-KEY-LCD	DXG-KEY-LCD	DXG-KEY-LCD
Main control board	DXG-SPR-CTRLBOARD	DXG-SPR-CTRLBOARD	DXG-SPR-CTRLBOARD
Control module kit with keypad <sup>①</sup>	DXG-SPR-CTRLKIT	DXG-SPR-CTRLKIT	DXG-SPR-CTRLKIT
Control board cover	DXG-SPR-BCOVER	DXG-SPR-BCOVER	DXG-SPR-BCOVER
Standard cover	DXG-SPR-FR5CVR	DXG-SPR-FR5CVR	DXG-SPR-FR5CVR
Main fan kit <sup>①</sup>	DXG-SPR-FR5FANKIT	DXG-SPR-FR5FANKIT	DXG-SPR-FR5FANKIT
Main fan	DXG-SPR-FR5FAN	DXG-SPR-FR5FAN	DXG-SPR-FR5FAN
Control fan	DXG-SPR-FR5CF	DXG-SPR-FR5CF	DXG-SPR-FR5CF
Bus capacitor	DXG-SPR-FR5BC	DXG-SPR-FR5BC	DXG-SPR-FR5BC
Main power board	DXG-SPR-2FR5MPB	DXG-SPR-4FR5MPB	DXG-SPR-4FR5MPB
EMI-1 board	DXG-SPR-2FR5E1B	DXG-SPR-4FR5E1B	DXG-SPR-4FR5E1B
EMI-2 board	DXG-SPR-2FR5E2B	DXG-SPR-4FR5E2B	DXG-SPR-4FR5E2B
EMI-3 board	DXG-SPR-FR5E3B	DXG-SPR-FR5E3B	DXG-SPR-FR5E3B
IGBT module	DXG-SPR-2FR5IGBT	DXG-SPR-4FR5IGBT	DXG-SPR-5FR5IGBT
Rectifier module	DXG-SPR-FR5RM	DXG-SPR-FR5RM	DXG-SPR-5FR5RM
Brake chopper module	DXG-SPR-2FR5BCM	DXG-SPR-4FR5BCM	DXG-SPR-4FR5BCM
Middle chassis cover	DXG-SPR-FR5MCC	DXG-SPR-FR5MCC	DXG-SPR-FR5MCC
Outer housing	DXG-SPR-FR5OH	DXG-SPR-FR5OH	DXG-SPR-FR5OH
UL conduit plate	DXG-SPR-FR5CPUL	DXG-SPR-FR5CPUL	DXG-SPR-FR5CPUL
IEC conduit plate	DXG-SPR-FR5IECCP	DXG-SPR-FR5IECCP	DXG-SPR-FR5IECCP
DC terminal kit	DXG-SPR-FR5DCKIT	DXG-SPR-FR5DCKIT	DXG-SPR-FR5DCKIT

## Frame 6

Description	230 V Catalog Number	480 V Catalog Number	600 V Catalog Number
Standard keypad	DXG-KEY-LCD	DXG-KEY-LCD	DXG-KEY-LCD
Main control board	DXG-SPR-CTRLBOARD	DXG-SPR-CTRLBOARD	DXG-SPR-CTRLBOARD
Control module kit with keypad	DXG-SPR-CTRLKIT	DXG-SPR-CTRLKIT	DXG-SPR-CTRLKIT
Control board cover	DXG-SPR-BCOVER	DXG-SPR-BCOVER	DXG-SPR-BCOVER
Standard cover	DXG-SPR-FR6CVR	DXG-SPR-FR6CVR	DXG-SPR-FR6CVR
Type 12 grommet kit	DXG-SPR-FR6GRN12	DXG-SPR-FR6GRN12	DXG-SPR-FR6GRN12
Main fan kit	DXG-SPR-FR6FANKIT	DXG-SPR-FR6FANKIT	DXG-SPR-FR6FANKIT
Main fan	DXG-SPR-FR6FAN	DXG-SPR-FR6FAN	DXG-SPR-FR6FAN
Control fan	DXG-SPR-FR6CF	DXG-SPR-FR6CF	DXG-SPR-FR6CF
Bus capacitor	DXG-SPR-FR6BC	DXG-SPR-FR6BC	DXG-SPR-5FR6BC
Main power board	DXG-SPR-2FR6MPB	DXG-SPR-4FR6MPB	DXG-SPR-5FR6MPB
EMI board	DXG-SPR-FR6EB	DXG-SPR-FR6EB	DXG-SPR-FR6EB
IGBT module	DXG-SPR-2FR6IGBT	DXG-SPR-4FR6IGBT	DXG-SPR-5FR6IGBT
Rectifier module	DXG-SPR-FR6RM	DXG-SPR-FR6RM	DXG-SPR-5FR6RM
Middle chassis cover	DXG-SPR-FR6MCC	DXG-SPR-FR6MCC	DXG-SPR-FR6MCC
Outer housing	DXG-SPR-FR6OH	DXG-SPR-FR6OH	DXG-SPR-FR6OH
UL conduit plate	DXG-SPR-FR6CPUL	DXG-SPR-FR6CPUL	DXG-SPR-FR6CPUL
IEC conduit plate	DXG-SPR-FR6CPIEC	DXG-SPR-FR6CPIEC	DXG-SPR-FR6CPIEC
Softstart board	DXG-SPR-2FR6SB	DXG-SPR-4FR6SB	DXG-SPR-5FR6SB
Rectifier snubber board	DXG-SPR-2FR6RSB	DXG-SPR-4FR6RSB	DXG-SPR-5FR6RSB
Terminal block kit (1-pole)	DXG-SPR-FR6TB1P	DXG-SPR-FR6TB1P	DXG-SPR-FR6TB1P
Terminal block kit (3-pole)	DXG-SPR-FR6TB3P	DXG-SPR-FR6TB3P	DXG-SPR-FR6TB3P

**Note**

<sup>①</sup> Factory recommended spare parts.

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## Adjustable Frequency Drives

### PowerXL DG1 Series Drives

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#### Frame 7

<b>Description</b>	<b>230 V Catalog Number</b>	<b>480 V Catalog Number</b>	<b>575 V Catalog Number</b>
Standard keypad	—	<b>DXG-KEY-LCD</b>	<b>DXG-KEY-LCD</b>
Control module kit with keypad <sup>①</sup>	—	<b>DXG-SPR-HPCTRLKIT</b>	<b>DXG-SPR-HPCTRLKIT</b>
Control board cover	—	<b>DXG-SPR-BCOVER</b>	<b>DXG-SPR-BCOVER</b>
Standard cover	—	<b>DXG-SPR-FR1CVR</b>	<b>DXG-SPR-FR1CVR</b>

#### Frame 8

<b>Description</b>	<b>230 V Catalog Number</b>	<b>480 V Catalog Number</b>	<b>575 V Catalog Number</b>
Standard keypad	—	<b>DXG-KEY-LCD</b>	<b>DXG-KEY-LCD</b>
Control module kit with keypad <sup>①</sup>	—	<b>DXG-SPR-HPCTRLKIT</b>	<b>DXG-SPR-HPCTRLKIT</b>
Control board cover	—	<b>DXG-SPR-BCOVER</b>	<b>DXG-SPR-BCOVER</b>
Standard cover	—	<b>DXG-SPR-FR1CVR</b>	<b>DXG-SPR-FR1CVR</b>

**Note**

<sup>①</sup> Factory recommended spare parts.

## Technical Data and Specifications

### PowerXL Series—DG1 Technical Data and Specifications

Attribute	Description	Specification	
Input ratings	Input voltage $U_{in}$	208 V to 240 V, 380 V to 500 V, 525 V to 600 V, -15 to 10%	
	Input frequency	50 Hz to 60 Hz (variation up to 45 Hz to 66 Hz)	
	Connection to power	Once per minute or less	
	Starting delay	3 s (FR1 to FR2), 4 s (FR3), 5 s (FR4), 6 s (FR5 and FR6)	
	Short-circuit withstand rating	100 kAIC (fuses and circuit breakers); 5 kAIC (without fuses or breakers)	
Output ratings	Output voltage	0 to $U_{in}$	
	Continuous output current	$I_L$ : ambient temperature maximum 40 °C, up to 60 °C with derating, overload 1.1 x $I_L$ (1 min./10 min.) $I_H$ : ambient temperature maximum 50 °C, up to 60 °C with derating, overload 1.5 x $I_H$ (1 min./10 min.)	
	Overload current	150% of drive rating for constant torque, 110% for variable torque	
	Initial output current	200% (2 s / 20 s)	
	Output frequency	0–400 Hz (standard)	
	Frequency resolution	0.01 Hz	
Control characteristics	Control methods	Frequency control Speed control Open-loop speed control Open-loop torque control	
	Switching frequency	230 V / 480 V range: FR1–3: 1 kHz to 12 kHz FR4–6: 1 kHz to 10 kHz 230 V / 480 V defaults: FR1–3: 4 kHz FR4–5: 3.6 kHz FR6: 2 kHz 575 V range: FR1–6: 1 kHz to 6 kHz 575 V defaults: FR1–4: 3 kHz FR5–6: 2 kHz Automatic switching frequency derating in case of overload.	
	Frequency reference	Analog input: resolution 0.1% (10-bit), accuracy +1% Analog output: resolution 0.1% (10-bit), accuracy +1% Panel reference: resolution 0.01 Hz	
	Field weakening point	20 Hz to 400 Hz	
	Acceleration time	0.1 s to 3000 s	
	Deceleration time	0.1 s to 3000 s	
	Braking torque	DC brake: 30% x Motor Rated Torque ( $T_n$ ) (without brake chopper) Dynamic braking (with optional brake chopper using an external brake resistor): 100% continuous maximum rating	
	Ambient conditions	Ambient operating temperature	-10 °C (no frost) to +50 °C, up to +60 °C with derating (CT) -10 °C (no frost) to +40 °C, up to +60 °C with derating (VT)
		Storage temperature	-40 °C to +70 °C
		Relative humidity	0–95% RH, noncondensing, non-corrosive
Air quality: • Chemical vapors • Mechanical particles		Tested according to IEC 60068-2-60 Test Key: Flowing mixed gas corrosion test, Method 1 (H <sub>2</sub> S [hydrogen sulfide] and SO <sub>2</sub> [sulfur dioxide]) Designed according to: IEC 60721-3-3, unit in operation, class 3C2 IEC 60721-3-3, unit in operation, class 3S2	
Altitude		100% load capacity (no derating) up to 3280 ft (1000 m); 1% derating for each 328 ft (100 m) above 3280 ft (1000 m); max. 9842 ft (3000 m) (2000 m for corner grounded earth main systems) For 575 V product, maximum altitude is 6561 ft (2000 m) regardless of main system	

## PowerXL Series—DG1 Technical Data and Specifications, continued

Attribute	Description	Specification
2 Ambient conditions, continued	Vibration:	5–150 Hz
	• EN 61800-5-1	Displacement amplitude: 1 mm (peak) at 5 Hz to 15.8 Hz (FR1–FR6)
	• EN 60668-2-6	Maximum acceleration amplitude: 1g at 15.8 Hz to 150 Hz (FR1–FR6)
	Shock:	Storage and shipping: maximum 15 g, 11 ms (in package)
	• ISTA 1 A	
	• EN 60068-2-27	
	Overvoltage	Overvoltage Category III
	Pollution degree	Pollution Degree 2
	Enclosure class	IP21/Type 1 standard in entire kW/hp range IP54/Type 12 option Note: Keypad or keypad hole plug required to be mounted in drive for IP54/Type 12 rating
	Immunity	Fulfills EN 61800-3 (2004), first and second environment
MTBF		FR1: 165,457 hours
		FR2: 134,833 hours
		FR3: 102,515 hours
		FR4: 121,567 hours
		FR5: 108,189 hours
		FR6: 100,000 hours
Noise		FR1: 51.2 dB
		FR2: 58.6 dB
		FR3: 61.0 dB
		FR4: 68.0 dB
		FR5: 69.1 dB
		FR6: 73.2 dB
Standards	Safety	UL 508C, CSA C22.2 No. 274-13 and EN 61800-5-1
	EMC	+EMC2: EN 61800-3 (2004), Category C2 The drive can be modified for IT networks and corner grounding TN system
	Electrostatic discharge	Second environment, IEC 61000-4-2, 4 kV CD or 8 kV AD, Criterion B
	Fast transient burst	Second environment, IEC 61000-4-4, 2 kV/5 kHz, Criterion B
	Dielectrical strength	Primary to secondary: 3600 Vac/5100 Vdc Primary to earth: 2000 Vac/2828 Vdc
	Approvals	EAC, RCM (C-Tick), RoHS, CE, UL and cUL (see nameplate for more detailed approvals)
	Fieldbus connections	Onboard: EtherNet/IP, Modbus® TCP, Modbus RTU, BACnet

**PowerXL Series—DG1 Technical Data and Specifications, continued**

<b>Attribute</b>	<b>Description</b>	<b>Specification</b>
Safety/protections	Overtoltage protection	Yes
	Overtoltage trip limit	230 V drives: 456 V 480 V drives: 911 V 575 V drives: 1100 V
	Undervoltage protection	Yes
	Undervoltage trip limit	230 V drives: 211 V 480 V drives: 370 V 575 V drives: 550 V
	Earth fault protection	Yes Default: 15% motor FLA Minimum: 0% motor FLA Maximum: 30% motor FLA
	Input phase supervision	Yes
	Motor phase supervision	Yes
	Overcurrent protection	Yes
	Unit overtemperature protection	Yes
	Motor overload protection	Yes
	Motor stall protection	Yes
	Motor underload protection	Yes
	DC bus overvoltage control	Yes
	Short-circuit protection of 24 V reference voltages	Yes
	Surge protection	Yes (differential mode 2 kV; common mode 4 kV 230 V drives: 275 Vac, 10,000 A 480 V drives: 320 Vac, 8000 A 575 V drives: 385 Vac, 10,000 A
Common coated boards	Yes (prevents corrosion)	

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## Adjustable Frequency Drives

### PowerXL DG1 Series Drives

#### PowerXL Series—DG1 Technical Data and Specifications—Efficiency

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#### 230 V

Frame Size	Load Torque	Efficiency		Input THDi
		VT	CT	
FR1	25%	92.10%	90.90%	42.8%
	50%	95.20%	95.20%	35.2%
	100%	96.70%	96.20%	29.9%
FR2	25%	90.80%	94.20%	70.0%
	50%	96.64%	97.09%	46.6%
	100%	97.30%	97.30%	33.3%
FR3	25%	97.23%	97.06%	53.1%
	50%	97.37%	97.17%	43.6%
	100%	97.00%	97.20%	30.8%
FR4	25%	94.60%	94.30%	39.4%
	50%	97.20%	97.10%	32.4%
	100%	97.60%	97.60%	25.6%
FR5	25%	94.5	94.30%	30.50%
	50%	97.80%	97.60%	30.8%
	100%	97.70%	97.80%	25.0%

#### 575 V












Frame Size	Load Torque	Efficiency		Input THDi
		VT	CT	
FR1	25%	97.48%	97.25%	62.6%
	50%	97.79%	97.66%	45.6%
	100%	98.10%	97.60%	36.8%
FR2	25%	98.06%	97.98%	60.6%
	50%	98.19%	98.11%	47.2%
	100%	98.20%	98.10%	36.7%
FR3	25%	97.98%	97.77%	78.9%
	50%	98.32%	98.18%	55.5%
	100%	98.10%	98.10%	36.3%
FR4	25%	98.27%	97.96%	66.1%
	50%	98.57%	98.44%	41.6%
	100%	98.30%	98.30%	31.2%
FR5	25%	98.60%	98.50%	52.80%
	50%	98.81%	98.78%	35.9%
	100%	98.60%	98.70%	28.4%

#### 480 V

Frame Size	Load Torque	Efficiency		Input THDi
		VT	CT	
FR1	25%	93.30%	90.70%	54.0%
	50%	97.10%	96.98%	46.8%
	100%	97.61%	97.67%	35.3%
FR2	25%	95.90%	94.20%	59.8%
	50%	97.81%	98.34%	42.7%
	100%	98.11%	98.20%	33.8%
FR3	25%	96.40%	95.20%	69.2%
	50%	97.87%	97.99%	45.2%
	100%	97.79%	98.15%	32.6%
FR4	25%	98.00%	97.80%	56.5%
	50%	97.97%	97.89%	39.8%
	100%	97.96%	98.17%	31.5%
FR5	25%	97.8	97.60%	50.3%
	50%	98.39%	98.10%	37.0%
	100%	98.14%	98.19%	29.5%

## Wiring Diagram

## PowerXL Series—DG1 Control Wiring Diagram

External Wiring	Pin	Signal Name	Signal	Default Setting	Description
	1	+10 V	Ref. Output Voltage	—	10 Vdc Supply Source
	2	AI1+	Analog Input 1	0–10 V	Voltage Speed Reference (Programmable to 4 mA to 20 mA)
	3	AI1–	Analog Input 1 Ground	—	Analog Input 1 Common (Ground)
	4	AI2+	Analog Input 2	4 mA to 20 mA	Current Speed Reference (Programmable to 0–10 V)
	5	AI2–	Analog Input 2 Ground	—	Analog Input 2 Common (Ground)
	6	GND	I/O Signal Ground	—	I/O Ground for Reference and Control
	7	DIN5	Digital Input 5	Preset Speed B0	Sets frequency output to Preset Speed 1
	8	DIN6	Digital Input 6	Preset Speed B1	Sets frequency output to Preset Speed 2
	9	DIN7	Digital Input 7	—	—
	10	DIN8	Digital Input 8	Force Remote (TI+)	Input takes VFD from Local to Remote
	11	CMB	DI5 to DI8 Common	Grounded	Allows source input
	12	GND	I/O Signal Ground	—	I/O Ground for Reference and Control
	13	24 V	+24 Vdc Output	—	Control voltage output (100 mA max.)
	14	DO1	Digital Output 1	Ready	Shows the drive is ready to run
	15	24 Vo	+24 Vdc Output	—	Control voltage output (100 mA max.)
	16	GND	I/O Signal Ground	—	I/O Ground for Reference and Control
	17	AO1+	Analog Output 1	Output Frequency	Shows Output frequency to motor 0–60 Hz (4 mA to 20 mA)
	18	AO2+	Analog Output 2	Motor Current	Shows Motor current of motor 0–FLA (4 mA to 20 mA)
	19	24 Vi	+24 Vdc Input	—	External control voltage input
	20	DIN1	Digital Input 1	Run Forward	Input starts drive in forward direction (start enable)
	21	DIN2	Digital Input 2	Run Reverse	Input starts drive in reverse direction (start enable)
	22	DIN3	Digital Input 3	External Fault	Input causes drive to fault
	23	DIN4	Digital Input 4	Fault Reset	Input resets active faults
	24	CMA	DI1 to DI4 Common	Grounded	Allows source input
	25	A	RS-485 Signal A	—	Fieldbus Communication (Modbus, BACnet)
	26	B	RS-485 Signal B	—	Fieldbus Communication (Modbus, BACnet)
	27	R3NO	Relay 3 Normally Open	At Speed	Relay output 3 shows VFD is at Ref. Frequency
	28	R1NC	Relay 1 Normally Closed	Run	Relay output 1 shows VFD is in a run state
	29	R1CM	Relay 1 Common		
	30	R1NO	Relay 1 Normally Open		
	31	R3CM	Relay 3 Common	At Speed	Relay output 3 shows VFD is at Ref. Frequency
	32	R2NC	Relay 2 Normally Closed	Fault	Relay output 2 shows VFD is in a fault state
	33	R2CM	Relay 2 Common		
	34	R2NO	Relay 2 Normally Open		

**Notes**

The above wiring demonstrates a SINK configuration. It is important that CMA and CMB are wired to ground (as shown by dashed line).

If a SOURCE configuration is desired, wire 24 V to CMA and CMB and close the inputs to ground.

When using the +10 V for AI1, it is important to wire AI1– to ground (as shown by dashed line).

If using +10 V for AI1 or AI2, terminals 3, 5 and 6 need to be jumpered together.



# 2.6

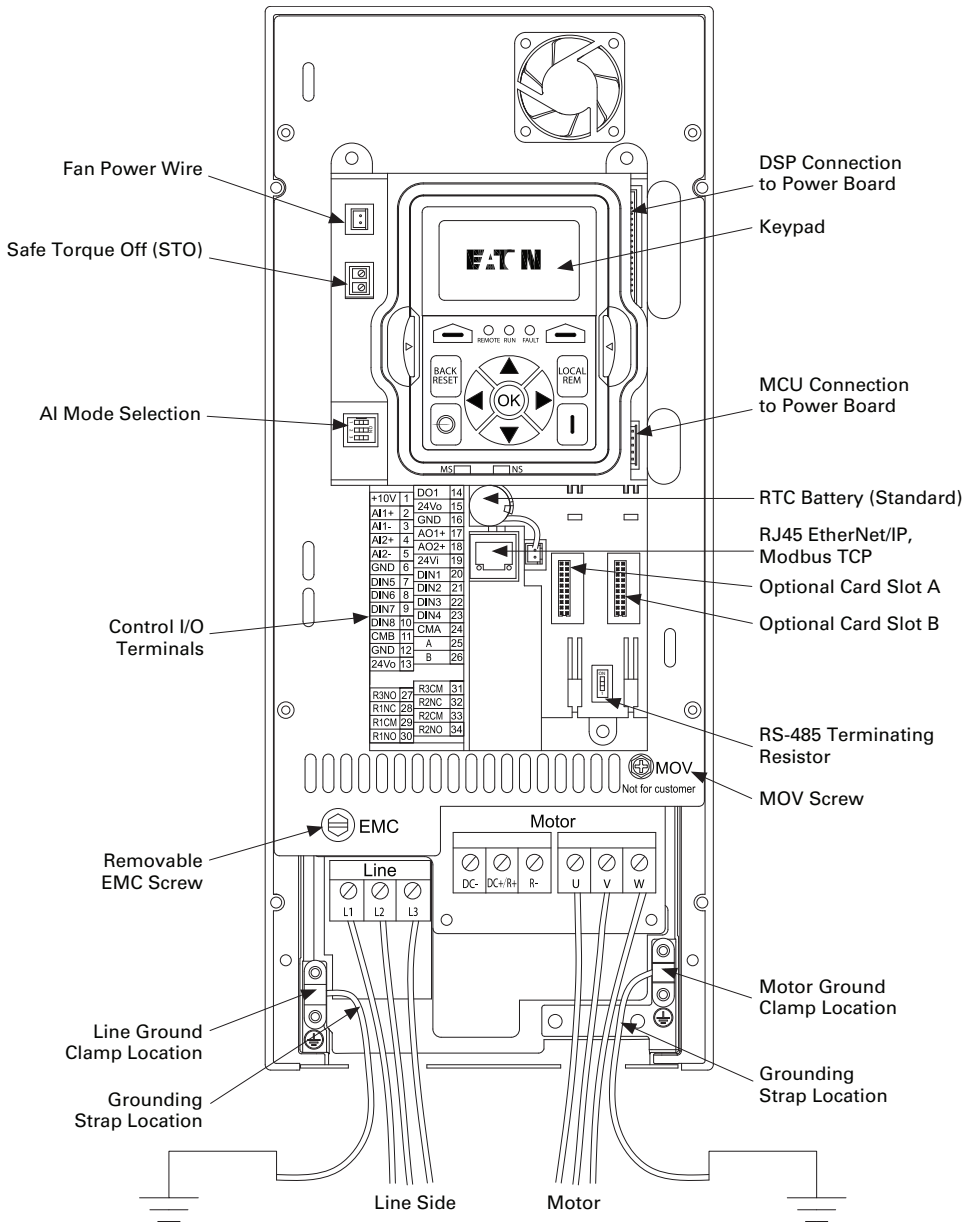
## Adjustable Frequency Drives

### PowerXL DG1 Series Drives

#### Control Board Layout

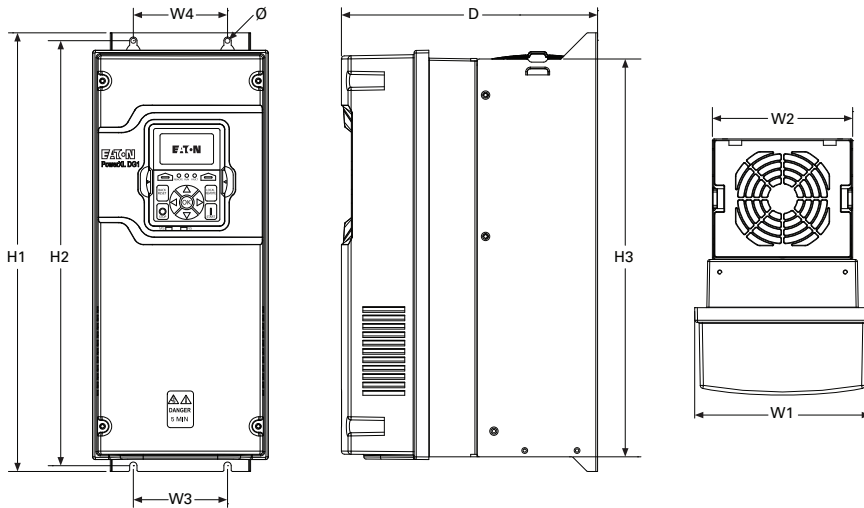
2

#### PowerXL Series—DG1 Control Board Layout



**Dimensions**

Approximate Dimensions in Inches (mm)

**PowerXL Series—DG1 Dimensions**

Frame Size	Voltage	hp (CT/I <sub>H</sub> )	kW	Amperes (CT/I <sub>H</sub> )	Approximate Dimensions in Inches (mm)									Weight Lb (kg)
					D	H1	H2	H3	W1	W2	W3	W4	Ø	
FR0	230 Vac	0.75–1.5	0.55–1.1	3.7–6.6	6.83	10.58	10.16	9.54	5.00	4.97	4.26	4.26	0.28	4.41
	480 Vac	1–3	0.75–2.2	2.2–5.6	(173.5)	(268.7)	(258)	(242.3)	(127)	(126.3)	(108.3)	(108.3)	(7.0)	(2.0)
FR1	230 Vac	0.75–3	0.55–2.2	3.5–11	7.91	12.87	12.28	11.50	6.02	4.80	3.94	3.94	0.28	14.33
	480 Vac	1–5	0.75–3.7	2.3–7.6	(200.9)	(326.9)	(311.9)	(292.1)	(153.0)	(121.9)	(100.1)	(100.1)	(7.0)	(6.5)
	575 Vac	2–5	1.5–3.7	3.3–7.5										
FR2	230 Vac	5–7.5	3–5.5	12.5–25	9.63	16.50	15.98	14.96	6.61	5.28	3.54	3.54	0.28	23.37
	480 Vac	7.5–15	5.5–11	12–23	(244.7)	(419.1)	(405.9)	(380.0)	(167.8)	(134.1)	(90.0)	(90.0)	(7.0)	(10.6)
	575 Vac	7.5–15	5.5–11	10–18										
FR3	230 Vac	10–15	7.5–11	31–48	10.44	21.97	21.46	20.41	8.06	7.24	4.92	4.92	0.35	49.82
	480 Vac	20–30	15–22	31–46	(265.1)	(558.0)	(545.0)	(518.5)	(204.6)	(183.9)	(125.0)	(125.0)	(9.0)	(22.6)
	575 Vac	20–30	15–22	22–34										
FR4	230 Vac	20–30	15–22	61–88	11.57	24.80	24.31	23.27	9.36	9.13	8.07	8.07	0.35	77.60
	480 Vac	40–60	30–45	61–87	(294.0)	(629.9)	(617.5)	(591.1)	(237.7)	(231.9)	(205.0)	(205.0)	(9.0)	(35.2)
	575 Vac	40–60	30–45	41–62										
FR5	230 Vac	40–60	30–45	114–170	13.41	34.98	29.65	27.83	11.34	11.10	8.66	8.66	0.35	154.32
	480 Vac	75–125	55–90	105–170	(340.7)	(888.5)	(753.1)	(706.9)	(288.0)	(281.9)	(220.0)	(220.0)	(9.0)	(70.0)
	575 Vac	75–125	55–90	80–125										
FR6	230 Vac	75–100	55–75	211–248	14.61	34.04	33.27	40.75	19.13	18.90	15.75	15.75	0.35	281.3
	480 Vac	150–200	110–150	205–261	(371.0)	(864.5)	(845.0)	(1035.0)	(486.0)	(480.0)	(400.0)	(400.0)	(9.0)	(127.6)
	575 Vac	150–200	110–160	144–208										
FR7	480 Vac	250–450	160–250	311–520	20.51	38.58	34.25	34.49	19.92	19.92	17.99	18.74	0.98	452
	575 Vac	250–400	187–298	261–416	(507.0)	(980.0)	(870.0)	(876.0)	(506.0)	(506.0)	(457.0)	(476.0)	(25.0)	(205.0)
	690 Vac	335–536	250–400	261–416										
FR7 with brake chopper	480 Vac	250–450	160–250	311–520	20.67	60.55	56.81	59.13	19.92	19.92	15.91	18.74	0.98	904
	575 Vac	250–400	187–298	261–416	(525.0)	(1538.0)	(1442.0)	(1501.9.0)	(506.0)	(506.0)	(404.0)	(476.0)	(25.0)	(410.0)
	690 Vac	335–536	250–400	261–416										
FR8	480 Vac	500–800	315–500	590–920	20.51	38.58	34.25	34.49	39.84	39.84	17.99	18.74	0.98	904
	575 Vac	450–650	336–485	460–650	(507.0)	(980.0)	(870.0)	(876.0)	(1012.0)	(1012.0)	(457.0)	(476.0)	(25.0)	(410.0)
	690 Vac	603–845	450–630	460–650										
FR8 with brake chopper	480 Vac	500–800	315–500	590–920	20.67	60.55	56.81	59.13	39.84	39.84	15.91	18.74	0.98	1808
	575 Vac	450–650	336–485	460–650	(525.0)	(1538.0)	(1442.0)	(1501.9.0)	(1012.0)	(1012.0)	(404.0)	(476.0)	(25.0)	(820.0)
	690 Vac	603–845	450–630	460–650										

**Note:** The FR8 drive includes 2 FR7 power units coupled together.