



Commander C200/C300 Competitor Migration Guides.

Provides details on migration from competitor products to Commander C200/C300.



Introduction.

This Guide provides details on migration from Competitor products to Commander C200/C300.

The competitor products covered include:

- Schneider ATV320 Compact Form Factor.
- Danfoss FC280
- Invertek E3
- ABB ACS380
- Rockwell Powerflex 525
- Siemens G120C

The guide provides the information listed below to allow for quick and easy migration to the Commander C200/C300

- Functionality Cross Reference
- Model Number Cross-Reference Based on Headline Nominal Power Ratings
- Environmental Conditions
- Electromagnetic Compatibility (EMC)
- Approvals
- Drive Ratings
 - 200V Ratings Based on Model Number Cross-Reference
 - 400V Ratings Based on Model Number Cross-Reference
 - 575V Ratings Based on Model Number Cross-Reference
- Braking Resistor Ratings
- Mechanical Installation
 - Overall Dimensions and Weight
 - Mounting Dimensions
- Electrical Installation
 - Power Specifications
 - Power Connections
- Control Connections
- Parameter Compare
 - Motor Data Parameter Comparison
 - Application Parameter Comparison





Commander C200/C300 Competitor Migration Guide.

*Schneider Electric ATV320
Compact Form Factor to
Commander C200/C300*



1.0 Functionality Cross-Reference

The table below provides a cross reference of functionality between the Schneider Electric ATV320 and the Commander C200/300.

Functionality		
Communications		
MODBUS	✓	Option ^{*1}
CANOpen	✓	Option ^{*2}
Reference		
Jog	✓	✓
Bi-polar reference	✓	✓
Preset speeds	16	8
Preset timer	✗	✓
Skip frequencies	3	3
Skip frequencies dead band	✓	✓
Local/Remote	✓	✓
S-Ramp	✓	✓
Acceleration Rates	2	8
Deceleration Rates	2	8
Pulse Train Frequency Reference	0 to 20 kHz	0 to 100kHz
Run Reverse	✓	✓
Torque reference	✓	✓
Control		
PM Control	✓	Unidrive M600
Control Mode: Linear V/f	✓	✓
Control Mode: Quadratic V/f	✓	✓
Control Mode: Dynamic V/f	✓	✓
Control Mode: Set Point V/f	✓	✓
Stator Resistance Compensation	✓	✓
Slip Compensation	✓	✓
Auto-tune: Static	✗	✓
Auto-tune: Rotating	✓	✓
Switching Frequency	2 to 16	0.677 to 16 ^{*3}
Catch a spinning motor	✓	✓
Stop mode: Ramp	✓	✓
Stop mode: Coast	✓	✓
Stop mode: Fast Ramp	✓	✓
DC Injection Braking	✓	✓
Brake settings (DC bus)	✓	✓
Cooling fan control	✓	✓
Motor pre-heat control	✗	✓
Supply loss detection	✓	✓
Low DC link operation	✓	✓

(Continued)

*1 KI485 Adapter

*2 SI-CANOpen can be used with frame size 2 drives and above.

*3 0.667kHz and 1kHz switching frequencies available on frame size 1 to 4 only.

1.0 Functionality Cross-Reference (continued)



Functionality		
I/O Functions		
Analogue input control	✓	✓
Analogue output control	✓	✓
Temperature monitoring	✓	✓
Digital input control	✓	✓
Digital output control	✓	✓
Relay control	✓	✓
Mechanical brake controller	✓	✓
Keypad button assignment	✗	✓
Motorised pot	✓	✓
Logic function control	✓	✓
Timer function control	✓	✓
Limit switch control	✓	✓
Threshold detection	✓	✓
Variable selector	✗	✓
PID control	✓	✓
General		
Displayable Parameters	✗	All
Energy meter	✓	✓
Trip time stamping	✓	✓
Previous trip data parameters	8	8
Run time log	✓	✓
Diagnostics	✓	✓
Auto-reset after trip	✓	✓
Power loss ride through	✓	✓
Control word control	✓	✓
Cloning	✓	✓
Security	✓	✓
On-board PLC	✓	✓
Spare application parameters	15	64
Second motor set-up	3	✓
Speed Feedback	✓	Option ^{*4}
I/O		
+10V user output	✓	✓
+24V user output	✓	✓
Enable	✓	✓
Safe Torque Off	SIL 2	SIL 3 ^{*5}
Digital Inputs	6	5
Digital Outputs	1	1
Analogue Inputs	3	2
Analogue Outputs	1	1
Relay	2	1

Table 1

^{*4} SI-Encoder can be used with frame size 2 drives and above.

^{*5} SIL 3 achievable on C300 only using the dual STO inputs.

2.0 Model Number Cross-Reference Based on Headline Nominal Power Ratings

The table below provides a cross-reference between the Schneider Electric ATV320 and the Commander C200/C300 equivalents based on the nominal power rating. Refer to *Section 5.0 Drive Ratings* for a more detailed cross reference including continuous output current.



					
Model Number	kW	Frame Size	Model Number	kW	Frame Size
200V					
ATV320U02M_C	0.18	1C (1)	CXXX-1200017	0.25	1
ATV320U04M_C	0.37	1C (2)	*CXXX-1200024	0.37	1
ATV320U06M_C	0.55	1C (2)	*CXXX-1200033	0.55	1
ATV320U07M_C	0.75	1C (2)	*CXXX-1200042	0.75	1
ATV320U11M_C	1.1	2C	CXXX-2200056	1.1	2
ATV320U15M_C	1.5	2C	CXXX-2200075	1.5	2
ATV320U22M_C	2.2	2C	CXXX-3200100	2.2	3
ATV320U30M3C	3	3C	CXXX-4200133	3	4
ATV320U40M3C	4	3C	CXXX-4200176	4	4
ATV320U55M3C	5.5	4C	CXXX-5200250	5.5	5
ATV320U75M3C	7.5	4C	CXXX-6200330	7.5	6
ATV320D11M3C	11	5C	CXXX-6200440	11	6
ATV320D15M3C	15	5C	CXXX-7200610	15	7
			CXXX-07200750	18.5	7
400V					
ATV320U04N4C	0.37	2C	CXXX-2400013	0.37	2
ATV320U06N4C	0.55	2C	CXXX-2400018	0.55	2
ATV320U07N4C	0.75	2C	CXXX-2400023	0.75	2
ATV320U11N4C	1.1	2C	CXXX-2400032	1.1	2
ATV320U15N4C	1.5	2C	CXXX-2400041	1.5	2
ATV320U22N4C	2.2	3C	CXXX-3400056	2.2	3
ATV320U30N4C	3	3C	CXXX-3400073	3	3
ATV320U40N4C	4	3C	CXXX-3400094	4	3
ATV320U55N4C	5.5	4C	CXXX-4400135	5.5	4
ATV320U75N4C	7.5	4C	CXXX-4400170	7.5	4
ATV320D11N4C	11	5C	CXXX-5400270	11	5
ATV320D15N4C	15	5C	CXXX-5400300	15	5
			CXXX-6400350	15	6
575V					
ATV320U07S6C	0.75	2C			
ATV320U15S6C	1.5	2C	CXXX-5500030	1.5	5
ATV320U22S6C	2.2	3C	CXXX-5500040	2.2	5
ATV320U40S6C	4	3C	CXXX-5500069	4	5
ATV320U55S6C	5.5	4C	CXXX-6500100	5.5	6
ATV320U75S6C	7.5	4C	CXXX-6500150	7.5	6
ATV320D11S6C	11	5C	CXXX-6500190	11	6
ATV320D15S6C	15	5C	CXXX-6500230	15	6

Table 2

* Frame 2 drives with equal power rating to be used if an SI option module is required.

3.0 Environmental Conditions

The table below provides a summary on the environmental conditions of the Schneider Electric ATV320 and the Commander C200/C300.



Specification		
Storage temperature	-25°C to 70°C	-40°C to 60°C
Operating temperature without de-rate	-10°C to 50°C	-20°C to 40°C
Operating conditions with de-rate	50°C to 60°C	40°C to 60°C
Humidity	95% Non-condensing	95% Non-condensing
Altitude	1000m – No de-rate 1000m to 3000m - 1% de-rate/100m	1000m – No de-rate 1000m to 3000m - 1% de-rate/100m
IP Rating	IP20 – Pollution degree 2	IP20 – Pollution degree 2
Vibration	1.5 mm peak to peak (f = 2...13 Hz) conforming to EN/IEC 60068-2-6 1 gn (f = 13...200 Hz) conforming to EN/IEC 60068-2-6	Testing in each of three mutually perpendicular axes in turn. Referenced standard: IEC 60068-2-6: Test Fc: Frequency range: 5 to 500 Hz Severity: 3.5 mm peak displacement from 5 to 9 Hz 10 m/s ² peak acceleration from 9 to 200 Hz 15 m/s ² peak acceleration from 200 to 500 Hz
Harsh Environments	Chemical class 3C3 Mechanical class 3S2	IEC60721-3-3 3C3 EN60068-2-60

Table 3

4.0 Electromagnetic Compatibility (EMC)

The table below provides a summary on the EMC standards supported by the Schneider Electric ATV320 and the Commander C200/C300.



Immunity Compliance		
IEC 61000-4-2 Electrostatic Discharge	No Data	Supported
IEC 61000-4-3 Radio frequency radiated field	No Data	Supported
IEC61000-4-4 Fast Transient Burst	No Data	Supported
IEC61000-4-5 Surges	No Data	Supported
IEC61000-4-6 Conducted Radio Frequency	No Data	Supported
IEC61000-4-11 Voltage Dips and Interruptions	No Data	Supported
IEC61000-6-1 Generic immunity standard for the residential, commercial and light industrial environments	No Data	Supported
IEC61000-6-2 Generic immunity standard for the industrial environment	No Data	Supported
IEC 61800-3 Immunity Requirements for adjustable speed power drive systems	Supported	Supported

Table 4

5.0 Approvals

The table below provides a summary on the approvals the Schneider Electric ATV320 and the Commander C200/C300 adhere too.



Approvals		
CSA	Supported	Supported
NOM117	Supported	Not supported
UL	Supported	Supported
RCM	Supported	Supported
EAC	Supported	Supported
CE	Supported	Supported
DNV	Not supported	Currently under approval
KC	Not supported	Currently under approval
TUV	To be confirmed	Supported

Table 5

6.0 Drive Ratings

The drive rating tables featured below conform to the terminology used in the Schneider Electric AVT320 Installation Manual. The nominal output current listed in the tables would be equivalent to the maximum continuous output current list in the Control techniques documentation. For the peak currents that can be achieved using the overloads of the drives Schneider electric refer to the maximum transient current.

6.1 200V Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the 200V drive ratings between the equivalent Schneider Electric AVT320 Compact Form and the Commander C200/C300.



										
Model No.	kW	HP	Nominal Output Current A	Max. Transient Current A	Model No.	kW @ 230V	HP @ 230V	Nominal Output Current A	Max. Transient Current A	RFC Max. Transient Current A
ATV320U02M_C	0.18	0.25	1.5	2.3	01200017	0.25	0.33	1.7	2.6	3.1
ATV320U04M_C	0.37	0.5	3.3	5.0	01200024	0.37	0.5	2.4	3.6	4.3
ATV320U06M_C	0.55	0.75	3.7	5.6	01200033	0.55	0.75	3.3	5.0	5.9
ATV320U07M_C	0.75	1.0	4.8	7.2	01200042	0.75	1.0	4.2	6.3	7.6
ATV320U11M_C	1.1	1.5	6.9	10.4	02200056	1.1	1.0	5.6	8.4	10.1
ATV320U15M_C	1.5	2.0	8.0	12.0	02200075	1.5	2.0	7.5	11.3	13.5
ATV320U22M_C	2.2	3.0	11.0	16.5	03200100	2.2	3.0	10.0	15.0	18.0
ATV320U30M3C	3.0	3.0	13.7	20.6	04200133	3.0	3.0	13.3	20.0	23.9
ATV320U40M3C	4.0	5.0	17.5	23.6	04200176	4.0	5.0	17.6	26.4	31.7
ATV320U55M3C	5.5	7.5	27.5	41.3	05200250	5.5	7.5	25.0	37.5	50.0
ATV320U75M3C	7.5	10.0	33.0	49.5	06200330	7.5	10.0	33.0	49.5	66.0
ATV320D11M3C	11.0	15.0	54.0	81.0	06200440	11	15.0	44.0	66.0	88.0
ATV320D15M3C	15.0	20.0	66.0	99.0	07200610	15.0	20.0	61.0	91.5	122.0
					07200750	18.5	25.0	75.0	112.5	150.0

Table 6

Schneider ATV320 values at 4kHz

Commander CXXX values based on 3kHz

6.2 400V Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the 400V drive ratings between the equivalent Schneider Electric AVT320 Compact Form and the Commander C200/C300 drives.



										
Model No.	kW	HP	Nominal Output Current A	Max. Transient Current A	Model No.	kW @ 400V	HP @ 460V	Nominal Output Current A	Max. Transient Current A	RFC Max. Transient Current A
ATV320U04N4C	0.37	0.5	1.5	2.3	02400013	0.37	0.5	1.3	2.0	2.3
ATV320U06N4C	0.55	0.8	1.9	2.9	02400018	0.55	0.75	1.8	2.7	3.2
ATV320U07N4C	0.75	1.0	2.3	3.5	02400023	0.75	1.0	2.3	3.5	4.1
ATV320U11N4C	1.1	1.5	3.0	4.5	02400032	1.1	1.5	3.2	4.8	5.8
ATV320U15N4C	1.5	2.0	4.1	6.2	02400041	1.5	2.0	4.1	6.2	7.4
ATV320U22N4C	2.2	3.0	5.5	8.3	03400056	2.2	3.0	5.6	8.4	10.1
ATV320U30N4C	3.0	3.0	7.1	10.7	03400073	3.0	3.0	7.3	11.0	13.1
ATV320U40N4C	4.0	5.0	9.5	14.3	03400094	4.0	5.0	8.4	14.1	16.9
ATV320U55N4C	5.5	7.5	14.3	21.5	04400135	5.5	7.5	13.5	20.3	24.3
ATV320U75N4C	7.5	10.0	17.0	25.5	04400170	7.5	10.0	17	25.5	30.6
ATV320D11N4C	11.0	15.0	27.7	41.6	05400270	11.0	20.0	27.0	40.5	54.0
ATV320D15N4C	15.0	20.0	33.0	49.5	05400300	15.0	20.0	30.0	45.0	60.0
					06400350	15.0	25.0	35.0	52.5	70.0

Table 7

Schneider ATV320 values at 4kHz

Commander CXXX values based on 3kHz

6.3 575V Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the 575V drive ratings between the equivalent Schneider Electric AVT320 Compact Form and the Commander C200/C300 drives.



										
Model No.	kW	HP	Nominal Output Current A	Max. Transient Current A	Model No.	kW @ 575V	HP @ 575V	Nominal Output Current A	Max. Transient Current A	RFC Max. Transient Current A
ATV320U07S6C	0.75	1.0	1.7	2.6						
ATV320U15S6C	1.5	2.0	2.7	4.1	05500030	1.5	2.0	3.0	4.5	6.0
ATV320U22S6C	2.2	3.0	3.9	5.9	05500040	2.2	3.0	4.0	6.0	8.0
ATV320U40S6C	4.0	5.0	6.1	9.2	05500069	4.0	5.0	6.9	10.3	13.8
ATV320U55S6C	5.5	7.5	9.0	13.5	06500100	5.5	7.5	10.0	15.0	20.0
ATV320U75S6C	7.5	10.0	11.0	16.5	06500150	7.5	10.0	15.0	22.5	30.0
ATV320D11S6C	11.0	15.0	17.0	25.5	06500190	11.0	15.0	19.0	28.5	38.0
ATV320D15S6C	15.0	20.0	22.0	33.0	06500230	15.0	20.0	23.0	34.5	46.0

Table 8

Schneider ATV320 values at 4kHz

Commander CXXX values based on 3kHz

6.4 Braking Resistor Ratings

Based on the equivalent drives specified in table 2, this section provides details on the braking resistor specifications for the Schneider Electric AVT320 Compact Form and the Commander C200/C300.



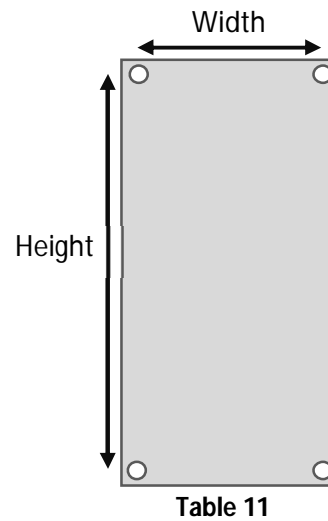
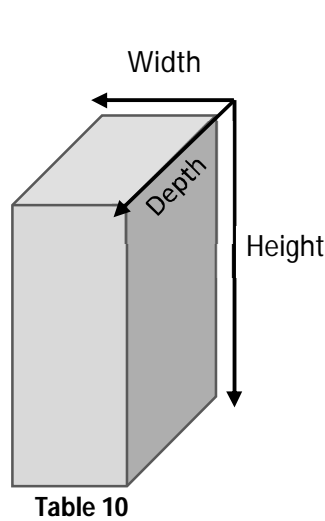
							
Model Number	Minimum Resistance Ω	Instantaneous power kW	Continuous power kW	Model Number	Minimum Resistance Ω	Instantaneous power kW	Continuous power kW
200V							
ATV320U02M_C	40	No Data	No Data	CXXX-1200017	130	1.1	0.25
ATV320U04M_C	40	No Data	No Data	CXXX-_200024	130 / 68* ¹	1.1 / 2.2* ¹	0.37
ATV320U06M_C	40	No Data	No Data	CXXX-_200033	130 / 68* ¹	1.1 / 2.2* ¹	0.55
ATV320U07M_C	40	No Data	No Data	CXXX-_200042	130 / 68* ¹	1.1 / 2.2* ¹	0.75
ATV320U11M_C	27	No Data	No Data	CXXX-2200056	68	2.2	1.1
ATV320U15M_C	27	No Data	No Data	CXXX-2200075	68	2.2	1.5
ATV320U22M_C	25	No Data	No Data	CXXX-3200100	45	3.3	2.2
ATV320U30M3C	16	No Data	No Data	CXXX-4200133	22	6.0	3
ATV320U40M3C	16	No Data	No Data	CXXX-4200176	22	6.0	4
ATV320U55M3C	8	No Data	No Data	CXXX-5200250	19	8.9	8.6
ATV320U75M3C	8	No Data	No Data	CXXX-6200330	10	16.9	12.6
ATV320D11M3C	5	No Data	No Data	CXXX-6200440	10	16.9	16.4
ATV320D15M3C	5	No Data	No Data	CXXX-7200610	4.5	37.6	15
				CXXX-7200750	4.5	37.6	18.5
400V							
ATV320U04N4C	80	No Data	No Data	CXXX-2400013	270	2.2	0.37
ATV320U06N4C	80	No Data	No Data	CXXX-2400018	270	2.2	0.55
ATV320U07N4C	80	No Data	No Data	CXXX-2400023	270	2.2	0.75
ATV320U11N4C	54	No Data	No Data	CXXX-2400032	270	2.2	1.1
ATV320U15N4C	54	No Data	No Data	CXXX-2400041	270	2.2	1.5
ATV320U22N4C	54	No Data	No Data	CXXX-3400056	100	6.0	2.2
ATV320U30N4C	54	No Data	No Data	CXXX-3400073	100	6.0	3
ATV320U40N4C	36	No Data	No Data	CXXX-3400094	100	6.0	4
ATV320U55N4C	27	No Data	No Data	CXXX-4400135	50	11.2	5.5
ATV320U75N4C	27	No Data	No Data	CXXX-4400170	50	11.2	7.5
ATV320D11N4C	16	No Data	No Data	CXXX-5400270	38	17.8	16.2
ATV320D15N4C	16	No Data	No Data	CXXX-5400300	22	30.8	19.6
				CXXX-6400350	20	33.8	21.6
575V							
ATV320U07S6C	96	No Data	No Data				
ATV320U15S6C	64	No Data	No Data	CXXX-5500030	80	12.1	2.6
ATV320U22S6C	64	No Data	No Data	CXXX-5500040	80	12.1	4.6
ATV320U40S6C	44	No Data	No Data	CXXX-5500069	80	12.1	6.5
ATV320U55S6C	34	No Data	No Data	CXXX-6500100	15	64.1	8.7
ATV320U75S6C	23	No Data	No Data	CXXX-6500150	15	64.1	12.3
ATV320D11S6C	24	No Data	No Data	CXXX-6500190	15	64.1	16.3
ATV320D15S6C	24	No Data	No Data	CXXX-6500230	15	64.1	19.9

Table 9

*1 (Size 1 Ratings) / (Size 2 Ratings)

7.0 Mechanical Installation

Based on the equivalent drives specified in table 2, this section provides details on the dimension differences between the Schneider Electric AVT320 Compact Form and the Commander C200/C300. The dimensions are listed in tables 10 and 11 are based on the dimensions in the diagrams below.



7.1 Overall Dimensions and Weight

Based on the equivalent drives specified in table 2, this section provides details on the mounting dimension differences between the Schneider Electric AVT320 Compact Form and the Commander C200/C300. The AVT320 compact form has multiple depths and weights per frame size (1 to 5) based on the power rating. For simplicity, frame sizes have been condensed to those with unique mounting dimensions and the maximum depth and weights for that frame size have been listed.



									
Frame	Height	Width	Depth	Weight	Frame	Height	Width	Depth	Weight
1C (1)	143mm (5.6in)	72mm (2.8in)	109mm (4.3in)	0.8kg (1.8lb)	1	160mm (6.3in)	75mm (2.95in)	130mm (5.1in)	0.75kg (1.85lb)
1C (2)	143mm (5.6in)	72mm (2.8in)	143mm (5.0in)	1.1kg (2.4lb)					
2C	143mm (5.6in)	105mm (4.1in)	158mm (6.2in)	1.60kg (3.5lb)	2	205mm (8.07in)	75mm (2.95in)	150mm (5.9in)	1.3kg (3.00lb)
3C	184mm (7.2in)	140mm (5.5in)	158mm (6.2in)	2.5kg (5.5lb)	3	226mm (8.9in)	90mm (3.54in)	160mm (6.3in)	1.5kg (3.30lb)
4C	232mm (9.1in)	150mm (5.9in)	178mm (8.0in)	3.6kg (7.9lb)	4	277mm (10.9in)	115mm (4.53in)	175mm (6.89in)	3.13kg (6.90lb)
5C	330mm (13.0in)	180mm (7.1in)	198mm (7.8in)	6.9kg (15.2lb)	5	365mm (14.37in)	143mm (5.63in)	200mm (7.87in)	7.4kg (16.30lb)
					6	365mm (14.37in)	210mm (8.27in)	227mm (8.94in)	14kg (30.90lb)
					7	508mm (20.0in)	270mm (10.63in)	280mm (11.02in)	28kg (61.70lb)

Table 10

7.2 Mounting Dimensions

Based on the equivalent drives specified in table 2, this section provides details on the mounting dimension differences between the Schneider Electric AVT320 Compact Form and the Commander C200/C300.



							
Frame	Height	Width	Mounting Holes	Frame	Height	Width	Mounting Holes
1C (1)	131mm (5.16in)	60mm (2.36in)	4 × Ø5mm (4 × Ø0.2in)	1	143mm (5.70in)	53mm (2.08in)	4 × Ø5mm (4 × Ø0.2in)
1C (2)	121.5mm (4.78in)	60mm (2.36in)					
2C	118mm (4.65in)	93mm (3.66in)	4 × Ø5mm (4 × Ø0.2in)	2	194mm (7.63in)	55mm (2.17in)	4 × Ø5mm (4 × Ø0.2in)
3C	157mm (6.18in)	126mm (4.96in)	4 × Ø5mm (4 × Ø0.2in)	3	215mm (8.46in)	70.7mm (2.80in)	4 × Ø5mm (4 × Ø0.2in)
4C	210mm (8.27in)	130mm (5.12in)	4 × Ø5mm (4 × Ø0.2in)	4	265mm (10.43in)	86mm (3.40in)	4 × Ø6mm (4 × Ø0.23in)
5C	295mm (11.61in)	160mm (6.30in)	4 × Ø6mm (4 × Ø0.23in)	5	375mm (14.76in)	106mm (4.17in)	4 × Ø6.5mm (4 × Ø0.26in)
				6	378mm (14.88in)	196mm (7.72in)	4 × Ø7mm (4 × Ø0.27in)
				7	538mm (21.18in)	220mm (8.66in)	4 × Ø9mm (4 × Ø0.27in)

Table 11

8.0 Electrical Installation

8.1 Power Specifications

The table below provides a cross-reference of power specifications between the Schneider Electric AVT320 Compact Form and the Commander C200/C300.



Specification		
Input Voltage Range	200V to 240Vac (-15 +10%) 380V to 500Vac (-15 +10%) 525V to 600Vac (-15 +10%)	100V to 120V (±10%) 200V to 240V (±10%) 380V to 480V (±10%) 500 V to 575 V (±10 %) 500 V to 690 V (±10 %)
Input Frequency Range	50 to 60Hz (-/+5%)	44 to 66Hz
Output Overload Rating	150% for 60s	150% for 60s, 180% for 3s (RFC-A)
Output Frequency Range	0 to 599Hz	0 to 599Hz
Output Switching Frequency Range	2 to 16kHz	0.667kHz to 16kHz*
Headline Rating Switching Frequency	4kHz	3kHz

Table 12

* 0.667kHz and 1kHz switching frequencies available on frame size 1 to 4 only.

8.2 Power Connections

The table below provides a cross-reference of power terminals between the Schneider Electric AVT320 Compact Form and the Commander C200/C300. Refer to the product user guide for fusing and cable information.



		
Function	Terminal No.	Terminal No.
Supply L1	R/L1	L1
Supply L2	S/L2/N	L2* ¹
Supply L3	T/L3* ²	L3
Motor U phase	U/T1	U
Motor V Phase	V/T2	V
Motor W Phase	W/T3	W
+ DC Bus	PA/+	+
-DC Bus	PC/-	-
Braking	PO	+
	PB	BR
Earth	⊥	⊥

Table 13

*¹ If supplied from single-phase use terminals L1 (Live) & L3 (Neutral)

*² If supplied from a single-phase supply T/L3 not required. Use L1 (Live) and L2 (Neutral)

8.3 Control Connections

The table below provides a cross-reference of control connections between the Schneider Electric AVT320 and the Commander C200/C300. Direction connection replacements are indicated via an arrow. For more information on the STO and other terminals refer to the individual drive's installation manual.



Default Function		
	Terminal No.	Terminal No.
0V Common	COM (x2)	1
Analogue Input 1	AI1	2
+10V User Output	10V	4
Analogue Input 2	AI2	5
Analogue Input 3	AI3	7 (SI-I/O Option Module)
Analogue Output 1	AQ1	7
+24V User Output	+24V	9
Digital Input 1	DI1	10 (I/O) * ¹
Digital Input 2	DI2	11
Digital Input 3	DI3	12
Digital Input 4	DI4	13
Digital Input 5	DI5	14
Digital Input 6	DI6	2 (SI-I/O Option Module)
Digital Output 1	DQ+, DQ-	10 (I/O) * ¹
Relay 1 Common	R1C	Powerdrive F300
Relay 1 Normally Open Contact	R1A	Powerdrive F300
Relay 1 Normally Closed	R1B	Powerdrive F300
Relay 2 Common	R2C	41
Relay 2 Normally Open	R2A	42
STO +24V	P24	Not Required
STO	STO	31, 34 (31, 35) * ²
STO 0V Common	Not Required	32, 33 (32, 36) * ²

Table 14

*¹ Terminal 10 on the Commander can be configured as a digital input or as a digital output

*² Commander C300 only. STO connections change from frame 5. Frame 5+ terminals in brackets

9.0 Parameter Compare

9.1 Motor Data Parameter Comparison

The table below provides a cross reference between key parameters required for motor setup in the Schneider Electric ATV320 and Commander C200/C300. If a parameter in the ATV320 does not have an equivalent parameter in the Commander C200/C300 details will be provided how similar functionality can be achieved.

Parameter Function	Parameter Location				Parameter Name	Units / Options	Parameter Location		Parameter Name	Units / Options
	Menu	Sub Menu	Sub Menu	Parameter			Menu	Parameter		
	Standard Frequency	ConF	FuLL	SiN-			bFr	Standard mot. freq		
Motor Rated Power	ConF	FuLL	SiN-	nPr	Rated motor power	kW/HP based on bFr	No Equivalent Parameter ^{*2}			
Motor Rated Voltage	ConF	FuLL	SiN-	unS	Rated motor volt.	1V	00	008	Motor Rated Voltage	1V
Motor Rated Current	ConF	FuLL	SiN-	nCr	Rated mot. current	0.01A	00	006	Motor Rated Current	0.01A
Motor Rated Frequency	ConF	FuLL	SiN-	FrS	Rated motor freq.	1Hz	05	006	Motor Rated Frequency	0.01Hz
Motor Rated Speed	ConF	FuLL	SiN-	nSP	Rated motor speed	1rpm	00	007	Motor Rated Speed	0.1rpm
Motor Rated Power Factor	ConF	FuLL	DRC-	CoS ^{*3}	Motor 1 Cosinus Phi	0.01	00	009	Motor Rated Power Factor	0.01

Table 15

^{*1} The ATV320 parameter "Standard mot. freq" is used to assign default values to motor data parameters. The equivalent function in a Commander is achieved by setting parameter 0 in any menu to 1233 or 1244 to set 50hz or 60Hz defaults respectively.

^{*2} In the ATV320 this parameter is used to determine the motor efficiency. For equivalent functionality use Motor Rated Power Factor (Pr 09) in the Commander CXXX drives instead.

^{*3} This parameter will only be displayed if the ATV320 is configured to use motor rated power factor opposed to the default motor rated power for their baseline calculations. This can be changed using parameter "nPC - motor param choice" that can be found in the same menu.

9.2 Application Parameter Comparison

The table below provides a cross reference between key parameters required for application setup in the Schneider Electric ATV320 and Commander C200/C300. If a parameter in the ATV320 does not have an equivalent parameter in the Commander C200/C300 details will be provided on how similar functionality can be achieved.



Parameter Function											
	Parameter Location				Parameter Name	Units	Parameter Location		Parameter Name	Units	
	Menu	Sub Menu	Sub Menu	Parameter			Menu	Parameter			
Minimum Frequency	ConF	FuLL	SiN-	LSP	Low Speed	1Hz	0	01	Minimum Frequency	0.01Hz	
Maximum Frequency	ConF	FuLL	SiN-	HSP	High Speed	1Hz	0	02	Maximum Frequency	0.01Hz	
Acceleration Rate	ConF	FuLL	SiN-	ACC	Acceleration	0.01s	0	03	Acceleration Rate 1	0.1s	
Deceleration Rate	ConF	FuLL	SiM-	dEC	Deceleration	0.01s	0	04	Deceleration Rate 1	0.1s	
Quick Setup	ConF	FuLL	SiM-	CFG	Macro Configuration	N/A	0	05	Drive Configuration	N/A	
Reference Selector	No Equivalent Parameter* ¹						01	014	Reference Selector	N/A	
Preset Speed 1	No designated parameter, uses Reference Channel 1.						0	18	Preset Speed 1	0.01Hz	
Preset Speed 2	FuLL	FUN-	PSS-	SP2	Preset Speed 2	1Hz	0	19	Preset Speed 2	0.01Hz	
Preset Speed 3	FuLL	FUN-	PSS-	SP3	Preset Speed 3	1Hz	0	20	Preset Speed 3	0.01Hz	
Preset Speed 4	FuLL	FUN-	PSS-	SP4	Preset Speed 4	1Hz	0	21	Preset Speed 4	0.01Hz	
Preset Speed 5	FuLL	FUN-	PSS-	SP5	Preset Speed 5	1Hz	01	025	Preset Speed 5	0.01Hz	
Preset Speed 6	FuLL	FUN-	PSS-	SP6	Preset Speed 6	1Hz	01	026	Preset Speed 6	0.01Hz	
Preset Speed 7	FuLL	FUN-	PSS-	SP7	Preset Speed 7	1Hz	01	027	Preset Speed 7	0.01Hz	
Preset Speed 8	FuLL	FUN-	PSS-	SP8	Preset Speed 8	1Hz	01	028	Preset Speed 8	0.01Hz	

Table 16

*¹ The reference signal in the ATV320 is determined by several parameters in the Command menu.




Commander C200/C300 Competitor Migration Guide.

*Danfoss VLT[®] Midi Drive
FC 280 to Commander
C200/C300*



1.0 Functionality Cross-Reference

The table below provides a cross reference of functionality between the FC 280 and the Commander C200/300.

Functionality		
Communications		
MODBUS RTU	✓	KI-485 Adapter Required
FC BUS	✓	✗
PROFINET	Optional	SI-PROFINET *1
EtherNet/IP	Optional	SI-Ethernet *1
CANopen	Optional	SI-CANopen *1
PROFIBUS DP	Optional	SI-PROFIBUS *1
POWERLINK	Optional	SI-POWERLINK *1
Reference		
Jog	✓	✓
Bi-polar reference	✓	✓
Preset speeds	8	8
Skip frequencies (bypass speed)	1	3
Skip frequencies dead band	✓	✓
Local/Remote	✓	✓
S-Ramp	✓	✓
Acceleration Rates	4	8
Deceleration Rates	4	8
Pulse Train Frequency Reference	0 to 32kHz	0 to 100kHz
Run Reverse	✓	✓
Torque reference	✓	✓
Control		
PM Control	✓	Unidrive M600
Control Mode: Linear V/f	✓	✓
Control Mode: Quadratic V/f	✗	✓
Control Mode: Dynamic V/f	✓	✓
Control Mode: Set Point V/f	✓	✓
Stator Resistance Compensation	✓	✓
Slip Compensation	✓	✓
Auto-tune: Static	✓	✓
Switching Frequency	2 to 16kHz	0.677 to 16*2
Catch a spinning motor	✓	✓
Stop mode: Ramp	✓	✓
Stop mode: Coast	✓	✓
Stop mode: Fast Ramp	✓	✓
Stop mode: Speed Compensation	✓	Onboard PLC
DC Injection Braking	✓	✓
Brake settings (DC bus)	✓	✓
Cooling fan control	✓	✓
Motor pre-heat control	✓	✓
Supply loss detection	✓	✓
Low DC link operation	✓	✓

(Continued)

1.0 Functionality Cross-Reference (continued)


Functionality		
I/O Functions		
Analogue input control	✓	✓
Analogue output control	✓	✓
Temperature monitoring	✓	✓
Digital input control	✓	✓
Digital output control	✓	✓
Relay control	✓	✓
Mechanical brake controller	✓	✓
Motorised pot	✓	✓
Logic function control	✓	✓
Timer function control	✓	✓
Limit switch control	✓	✓
Threshold detection	✓	✓
Variable selector	✓	✓
PID control	✓	✓
General		
Displayable Parameters	95	All
Energy meter	✓	✓
Trip time stamping	No	✓
Previous trip data parameters	3	8
Run time log	✓	✓
Diagnostics	✓	✓
Auto-reset after trip	✓	✓
Power loss ride through	✓	✓
Control word control	✓	✓
Cloning	✓	✓
Security	✓	✓
Speed Feedback	✓	Option ^{*3}
I/O		
+10V user output	✓	✓
+24V user output	2	✓
Enable	✓	✓
Safe Torque Off	SIL 2	SIL 3 ^{*4}
Digital Inputs	6	5
Digital Outputs	1	1
Analogue Inputs	2	2
Analogue Outputs	1	1
Relay	1	1

Table 1.0

*1 Option modules can be used with frame size 2 drives and above.

*2 0.667kHz and 1kHz switching frequencies available on frame size 1 to 4 only.

*3 SI-Encoder can be used with frame size 2 drives and above.

*4 SIL 3 achievable on C300 only using the dual STO inputs.

2.0 Model Number Cross-Reference Based on Headline Nominal Power Ratings

The table below provides a cross-reference between the FC 280 and the Commander C200/C300 equivalents based on the nominal power rating. Refer to *Section 5.0 Drive Ratings* for a more detailed cross reference including continuous output current.



					
Model Number	kW	Frame Size	Model Number	kW	Frame Size
200V					
PK37_2	0.37	K1	CXXX-1200017	0.25	1
PK55_2	0.55	K1	CXXX-1200024* ¹	0.37	1
PK75_2	0.75	K1	CXXX-1200033* ¹	0.55	1
P1K1_2	1.1	K1	CXXX-1200042* ¹	0.75	1
P1K5_2	1.5	K1	CXXX-2200056	1.1	2
P2K2_2	2.2	K2	CXXX-2200075	1.5	2
P3K7T2	3.7	K3	CXXX-3200100	2.2	3
400V					
PK37T4	0.37	K1	CXXX-2400013	0.37	2
PK55T4	0.55	K1	CXXX-2400018	0.55	2
PK75T4	0.75	K1	CXXX-2400023	0.75	2
P1K1T4	1.1	K1	CXXX-2400032	1.1	2
P1K5T4	1.5	K1	CXXX-2400041	1.5	2
P2K2T4	2.2	K1	CXXX-3400056	2.2	3
P3K0T4	3.0	K2	CXXX-3400073	3	3
P4K0T4	4.0	K2	CXXX-3400094	4	3
P5K5T4	5.5	K2	CXXX-4400135	5.5	4
P7K5T4	7.5	K3	CXXX-4400170	7.5	4
P11KT4	11	K4	CXXX-5400270	11	5
P15KT4	15	K4	CXXX-5400300	15	5
			CXXX-6400350	15	6
P18KT4	18.5	K5	CXXX-6400420	18.5	6
P22KT4	22	K5	CXXX-6400470	22	6

Table 2.0

*¹ Frame 2 drives with equal power rating to be used if an SI option module is required.

3.0 Environmental Conditions

The table below provides a summary on the environmental conditions of the FC 280 and the Commander C200/C300.



Specification		
Storage temperature	-25°C to +65/70 °C	-40°C to 60°C
Operating temperature without de-rate	0°C to 45°C	-20°C to 40°C
Operating conditions with de-rate	-10°C to 55°C	40°C to 60°C
Humidity	5% to 95% Non-condensing	95% Non-condensing
Altitude	1000m – No de-rate 1000m to 3000m – De-rate applicable	1000m – No de-rate 1000m to 3000m - 1% de-rate/100m
IP Rating	IP20 / IP21 Optional	IP20 – Pollution degree 2
Vibration	1.14g	Testing in each of three mutually perpendicular axes in turn. Referenced standard: IEC 60068-2-6: Test Fc: Frequency range: 5 to 500 Hz Severity: 3.5 mm peak displacement from 5 to 9 Hz 10 m/s ² peak acceleration from 9 to 200 Hz 15 m/s ² peak acceleration from 200 to 500 Hz
Harsh Environments	IEC60721-3-3 3C3	IEC60721-3-3 3C3 EN60068-2-60

Table 3.0

4.0 Electromagnetic Compatibility (EMC)

The table below provides a summary on the EMC standards supported by the FC 280 and the Commander C200/C300.



Immunity Compliance		
IEC 61000-4-2 Electrostatic Discharge	Supported	Supported
IEC 61000-4-3 Radio frequency radiated field	Supported	Supported
IEC61000-4-4 Fast Transient Burst	Supported	Supported
IEC61000-4-5 Surges	Supported	Supported
IEC61000-4-6 Conducted Radio Frequency	Supported	Supported
IEC61000-4-11 Voltage Dips and Interruptions	No Data Provided	Supported
IEC61000-6-1 Generic immunity standard for the residential, commercial and light industrial environments	Supported	Supported
IEC61000-6-2 Generic immunity standard for the industrial environment	Supported	Supported
IEC 61800-3 Immunity Requirements for adjustable speed power drive systems	Supported	Supported

Table 4.0

5.0 Approvals

The table below provides a summary on the approvals the FC 280 and the Commander C200/C300 adhere to.


Approvals		
CSA	cUL	Supported
UL	Supported	Supported
RCM	Supported	Supported
EAC	Supported	Supported
CE	Supported	Supported
DNV	Not supported	Currently under approval
KC	Not supported	Currently under approval
TUV	Supported	Supported

Table 5.0

6.0 Drive Ratings

The drive rating tables featured below conform to the terminology used in the FC 280 Operating Guide. The continuous output current listed in the tables would be equivalent to the maximum continuous output current list in the Control Techniques documentation. For the peak currents that can be achieved using the overloads of the FC 280 refer to the intermittent output current.

6.1 200V Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the 200V drive ratings between the equivalent FC 280 and the Commander C200/C300. The FC 280 can be supplied by a single phase 200V input up to 2.2kW. FC 280 values given in the table correspond to the values at the default switching frequency which are model dependent. Commander C200/C300 values correspond to the values at the default switching frequency of 3kHz.



										
Model No.	kW	HP	Continuous Output Current A	Intermittent Output Current A	Model No.	kW @ 230V	HP @ 230V	Continuous Output Current A	Peak Current A	RFC-A Peak Current A
PK37_2	0.37	0.5	2.2	3.5	01200024	0.37	0.5	2.4	3.6	4.3
PK55_2	0.55	0.75	3.2	5.1	01200033	0.55	0.75	3.3	5.0	5.9
PK75_2	0.75	1	4.2	6.7	01200042	0.75	1.0	4.2	6.3	7.6
P1K1_2	1.1	1.5	6	9.6	02200056	1.1	1.0	5.6	8.4	10.1
P1K5_2	1.5	2.0	6.8	10.9	02200075	1.5	2.0	7.5	11.3	13.5
P2K2_2	2.2	3.0	9.6	15.4	03200100	2.2	3.0	10.0	15.0	18.0
P3K7T2	3.7	5.0	15.2	24.3	04200133	3.0	3.0	13.3	20.0	23.9
					04200176	4.0	5.0	17.6	26.4	31.7

Table 6.0

6.2 400V Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the 400V drive ratings between the equivalent FC 280 and the Commander C200/C300 drives. FC 280 values given in the table correspond to the values at the default switching frequency which are model dependent. Commander C200/C300 values correspond to the values at the default switching frequency of 3kHz.



										
Model No.	kW	HP	Continuous Output Current A	Intermittent Output Current A	Model No.	kW @ 400V	HP @ 460V	Continuous Output Current A	Peak Current A	RFC-A Peak Current A
PK37T4	0.37	0.5	1.2	1.9	02400013	0.37	0.5	1.3	2.0	2.3
PK55T4	0.55	0.75	1.7	2.7	02400018	0.55	0.75	1.8	2.7	3.2
PK75T4	0.75	1.0	2.2	3.5	02400023	0.75	1.0	2.3	3.5	4.1
P1K1T4	1.1	1.5	3	4.8	02400032	1.1	1.5	3.2	4.8	5.8
P1K5T4	1.5	2.0	3.7	6.0	02400041	1.5	2.0	4.1	6.2	7.4
P2K2T4	2.2	3.0	5.3	8.5	03400056	2.2	3.0	5.6	8.4	10.1
P3K0T4	3.0	4.0	7.2	11.5	03400073	3.0	3.0	7.3	11.0	13.1
P4K0T4	4.0	5.5	9	14.4	03400094	4.0	5.0	8.4	14.1	16.9
P5K5T4	5.5	7.5	12	19.2	04400135	5.5	7.5	13.5	20.3	24.3
P7K5T4	7.5	10	15.5	24.8	04400170	7.5	10.0	17	25.5	30.6
P11KT4	11	15	23	34.5	05400270	11.0	20.0	27.0	40.5	54.0
P15KT4	15	20	31	46.5	05400300	15.0	20.0	30.0	45.0	60.0
					06400350	15.0	25.0	35.0	52.5	70.0
P18KT4	18.5	25	37	55.5	06400420	18.5	30	42	63	84
P22KT4	22	30	42.5	63.8	06400470	22	30	47	70.5	94

Table 6.1

6.3 Braking Resistor Ratings

Based on the equivalent drives specified in table 2, this section provides details on the braking resistor specifications for the FC 280 and the Commander C200/C300. Brake resistor values for the FC 280 have been taken from the VLT® Midi Drive FC 280 Design Guide for a brake resistor with a 40% duty cycle.



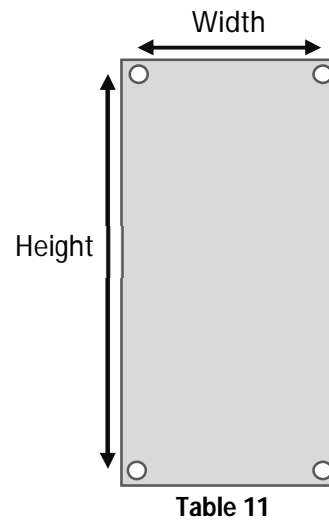
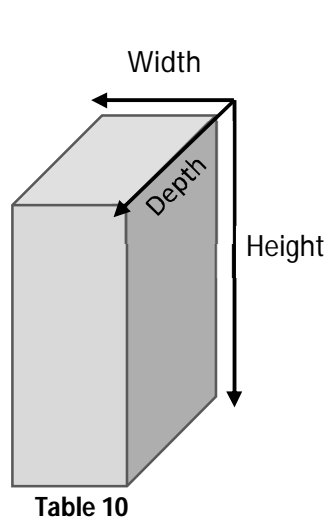
							
Model Number	Minimum Resistance Ω	Instantaneous power kW	Continuous power kW	Model Number	Minimum Resistance Ω	Instantaneous power kW	Continuous power kW
200V							
PK37T2	225	Not stated	0.129	CXXX-_200024	130 / 68* ¹	1.1 / 2.2* ¹	0.37
PK55T2	151	Not stated	0.192	CXXX-_200033	130 / 68* ¹	1.1 / 2.2* ¹	0.55
PK75T2	110	Not stated	0.261	CXXX-_200042	130 / 68* ¹	1.1 / 2.2* ¹	0.75
P1K1T2	73	Not stated	0.391	CXXX-2200056	68	2.2	1.1
P1K5T2	53	Not stated	0.541	CXXX-2200075	68	2.2	1.5
P2K2T2	35	Not stated	0.807	CXXX-3200100	45	3.3	2.2
P3K7T2	20	Not stated	1.386	CXXX-4200133	22	6.0	3
				CXXX-4200176	22	6.0	4
400V							
PK37T4	890	Not stated	0.127	CXXX-2400013	270	2.2	0.37
PK55T4	593	Not stated	0.191	CXXX-2400018	270	2.2	0.55
PK75T4	434	Not stated	0.260	CXXX-2400023	270	2.2	0.75
P1K1T4	288	Not stated	0.391	CXXX-2400032	270	2.2	1.1
P1K5T4	208	Not stated	0.541	CXXX-2400041	270	2.2	1.5
P2K2T4	139	Not stated	0.807	CXXX-3400056	100	6.0	2.2
P3K0T4	100	Not stated	1.113	CXXX-3400073	100	6.0	3
P4K0T4	74	Not stated	1.504	CXXX-3400094	100	6.0	4
P5K5T4	54	Not stated	2.088	CXXX-4400135	50	11.2	5.5
P7K5T4	38	Not stated	2.872	CXXX-4400170	50	11.2	7.5
P11KT4	27	Not stated	4.226	CXXX-5400270	38	17.8	16.2
P15KT4	19	Not stated	5.804	CXXX-5400300	22	30.8	19.6
				CXXX-6400350	20	33.8	21.6
P18KT4	16	Not stated	7.201	CXXX-6400420	20	33.8	25
P22KT4	16	Not stated	8.604	CXXX-6400470	20	33.8	32.7

Table 6.2

*1 (Size 1 Ratings) / (Size 2 Ratings)

7.0 Mechanical Installation

Based on the equivalent drives specified in table 2, this section provides details on the dimension differences between the FC 280 and the Commander C200/C300. The dimensions that are listed in tables 10 and 11 are based on the dimensions in the diagrams below.



7.1 Overall Dimensions and Weight

Based on the equivalent drives specified in table 2, this section provides details on the mounting dimension differences between the FC 280 and the Commander C200/C300.



									
Frame	Height	Width	Depth	Weight	Frame	Height	Width	Depth	Weight
K1	210mm (8.27in)	75mm (2.95in)	168mm (6.61in)	2.5kg (5.51lb)	1	160mm (6.3in)	75mm (2.95in)	130mm (5.1in)	0.75kg (1.85lb)
K2	272.5mm (10.73in)	90mm (3.54in)	168mm (6.61in)	3.6kg (7.94lb)	2	205mm (8.07in)	75mm (2.95in)	150mm (5.9in)	1.3kg (3.00lb)
					3	226mm (8.9in)	90mm (3.54in)	160mm (6.3in)	1.5kg (3.30lb)
K3	272.5mm (10.73in)	115mm (4.53in)	168mm (6.61in)	4.1kg (9.04lb)	4	277mm (10.9in)	115mm (4.53in)	175mm (6.89in)	3.13kg (6.90lb)
					5	365mm (14.37in)	143mm (5.63in)	200mm (7.87in)	7.4kg (16.30lb)
K4	320mm (12.60in)	135mm (5.31in)	245mm (9.65in)	9.5kg (20.94lb)	6	365mm (14.37in)	210mm (8.27in)	227mm (8.94in)	14kg (30.90lb)

Table 7.0

In many cases, the same frame sizes do not correspond to equal power rating ranges, refer to table 2 for the cross reference between power ratings and frame size.

7.2 Mounting Dimensions

Based on the equivalent drives specified in table 2, this section provides details on the mounting dimension differences between the FC 280 and the Commander C200/C300.



							
Frame	Height	Width	Mounting Holes	Frame	Height	Width	Mounting Holes
K1	198mm (7.79in)	60mm (2.36in)	4 × Ø4.5mm (4 × Ø0.18in)	1	143mm (5.70in)	53mm (2.08in)	4 × Ø5mm (4 × Ø0.2in)
K2	260mm (10.24in)	70mm (2.76in)	4 × Ø5.5mm (4 × Ø0.22in)	2	194mm (7.63in)	55mm (2.17in)	4 × Ø5mm (4 × Ø0.2in)
				3	215mm (8.46in)	70.7mm (2.80in)	4 × Ø5mm (4 × Ø0.2in)
K3	260mm (10.24in)	90mm (3.54in)	4 × Ø5.5mm (4 × Ø0.22in)	4	265mm (10.43in)	86mm (3.40in)	4 × Ø6mm (4 × Ø0.23in)
				5	375mm (14.76in)	106mm (4.17in)	4 × Ø6.5mm (4 × Ø0.26in)
K4	297.5mm (11.71in)	105mm (4.13in)	4 × Ø6.8mm (4 × Ø0.27in)	6	378mm (14.88in)	196mm (7.72in)	4 × Ø7mm (4 × Ø0.27in)
K5	390mm (15.35in)	120mm (4.72in)	4 × Ø7mm (4 × Ø0.28in)				

Table 7.1

In many cases, the same frame sizes do not correspond to equal power rating ranges, refer to table 2 for the cross reference between power ratings and frame size.

8.0 Electrical Installation

8.1 Power Specifications

The table below provides a cross-reference of power specifications between the FC 280 and the Commander C200/C300.



Specification		
Input Voltage Range	200V to 240V ($\pm 15\%$) 380V to 480V ($\pm 15\%$)	100 to 120 Vac ($\pm 10\%$) 200V to 240V ($\pm 10\%$) 380V to 480V ($\pm 10\%$) 500 V to 575 V ($\pm 10\%$) 500 V to 690 V ($\pm 10\%$)
Input Frequency Range	50/60 Hz $\pm 5\%$	44 to 66Hz
Output Overload Rating	160% for 60s	150% for 60s, 180% for 3s (RFC-A)
Output Frequency Range	0 to 500Hz	0 to 599Hz
Output Switching Frequency Range	2kHz to 16kHz	0.667kHz to 16kHz*
Headline Rating Switching Frequency	Size Related	3kHz

Table 8.0

* 0.667kHz and 1kHz switching frequencies available on frame size 1 to 4 only.

8.2 Power Connections

The table below provides a cross-reference of power terminals between the FC 280 and the Commander C200/C300. Refer to the product user guide for fusing and cable information.

Function	Terminal No.	Terminal No.
Supply L1	L1/N (91)	L1
Supply L2	L2/L (92)	L2* ¹
Supply L3	L3* ² (93)	L3
Motor U phase	U (96)	U
Motor V Phase	V (97)	V
Motor W Phase	W (98)	W
+ DC Bus	+DC (89)	+
-DC Bus	-DC (88)	-
Braking	R+ (89)	+
	R- (81)	BR
Earth	PE (95)	⊥

Table 8.1

*¹ If supplied from single-phase use terminals L1 (Live) & L3 (Neutral)

*² If supplied from a single-phase supply L3 not required. Use L (Live) and N (Neutral)

8.3 Control Connections

The table below provides a cross-reference of control connections between the FC 280 and the Commander C200/C300. Direct connection replacements are indicated via an arrow. For more information on the STO and other terminals refer to the individual drive's installation manual.


Default Function		
	Terminal No.	Terminal No.
0V Common	55	1
Analogue Input 1	53	2
+10V User Output	50	4
Analogue Input 2	54	5
Analogue Output 1	42	7
+24V User Output	12, 13	9
Digital I/O	27	10
Digital Input 2	18	11
Digital Input 3	19	12
Digital Input 4	29	13
Digital Input 5	32	14
Digital Input 6	33	2 (SI-I/O Option Module)
Relay 1 Common	01	41 / Powerdrive F300
Relay 1 Normally Open Contact	02	42 / Powerdrive F300
Relay 1 Normally Closed	03	Powerdrive F300
STO +24V	12 ^{*1}	Not Required
STO	37, 38	31, 34 (31, 35) ^{*2}
STO 0V Common	55 ^{*1}	32, 33 (32, 36) ^{*2}

Table 8.2

^{*1} STO 0V used with external +24V supply, see the Danfoss Operating Guide for more information

^{*2} Commander C300 only. STO connections change from frame 5 onwards and these terminals are listed in brackets

9.0 Parameter Compare

9.1 Motor Data Parameter Comparison

The table below provides a cross reference between key parameters required for motor setup in the FC 280 and Commander C200/C300. If a parameter in the FC 280 does not have an equivalent parameter in the Commander C200/C300 details on how similar functionality can be achieved will be provided.

Parameter Function	Parameter Location		Parameter Name	Units / Options	Parameter Location		Parameter Name	Units / Options
	Menu	Parameter			Menu	Parameter		
	Standard Frequency	0			03	Regional Settings		
Motor Rated Power	1	20	Motor Power	Selection based on kW rating	No Equivalent Parameter *2			
Motor Rated Voltage	1	22	Motor Voltage	1V	00	008	Motor Rated Voltage	1V
Motor Rated Current	1	24	Motor Current	0.01A	00	006	Motor Rated Current	0.01A
Motor Rated Frequency	1	23	Motor Frequency	1Hz	05	006	Motor Rated Frequency	0.01Hz
Motor Rated Speed	1	25	Motor Nominal Speed	1rpm	00	007	Motor Rated Speed	0.1rpm
Motor Rated Power Factor	No Equivalent Parameter				00	009	Motor Rated Power Factor	0.01

Table 9.0

*1 The FC 280 parameter "Regional Settings" is used to assign default values to motor data parameters. The equivalent function in a Commander is achieved by setting parameter 0 in any menu to 1233 or 1244 to set 50hz or 60Hz defaults respectively.

*2 In the FC 280 this parameter is used to determine the motor efficiency. For equivalent functionality in the Commander CXXX drives, use Motor Rated Power Factor (Pr 09) instead.

9.2 Application Parameter Comparison

The table below provides a cross reference between key parameters required for application setup in the FC 280 and Commander C200/C300. If a parameter in the FC 280 does not have an equivalent parameter in the Commander C200/C300 details on how similar functionality can be achieved will be provided.

Parameter Function								
	Parameter Location		Parameter Name	Units / Options	Parameter Location		Parameter Name	Units
	Menu	Parameter			Menu	Parameter		
Minimum Frequency	3	02	Minimum Reference	1rpm	0	01	Minimum Frequency	0.01Hz
Maximum Frequency	3	03	Maximum Reference	1rpm	0	02	Maximum Frequency	0.01Hz
Acceleration Rate	3	41	Ramp 1 Ramp Up Time	0.01s	0	03	Acceleration Rate 1	0.1s
Deceleration Rate	3	42	Ramp 1 Ramp Down Time	0.01s	0	04	Deceleration Rate 1	0.1s
Quick Setup	0	16	Application Selection	None / Process CL / Local/Remote / Speed OL / Speed CL / Multi Speed / OGD LA10 / OGD V210 / Hoist	0	05	Drive Configuration	N/A
Reference Selector	3	15	Reference 1 Source	Analog Input 1 / Analog Input 2 / Freq. Input 1 / Freq. Input 2 / Local Bus Ref / Digital Pot / Bus PCD	01	014	Reference Selector	N/A
Reference Selector	3	16	Reference 2 Source	Same as Ref 1	01	014	Reference Selector	N/A
Reference Selector	3	17	Reference 3 Source	Same as Ref 1	No Equivalent Parameter ^{*1}			
Preset Speed 1	3	10 [0]	Preset Reference	1%	0	18	Preset Speed 1	0.01Hz
Preset Speed 2	3	10 [1]	Preset Reference	1%	0	19	Preset Speed 2	0.01Hz
Preset Speed 3	3	10 [2]	Preset Reference	1%	0	20	Preset Speed 3	0.01Hz
Preset Speed 4	3	10 [3]	Preset Reference	1%	0	21	Preset Speed 4	0.01Hz
Preset Speed 5	3	10 [4]	Preset Reference	1%	01	025	Preset Speed 5	0.01Hz
Preset Speed 6	3	10 [5]	Preset Reference	1%	01	026	Preset Speed 6	0.01Hz
Preset Speed 7	3	10 [6]	Preset Reference	1%	01	027	Preset Speed 7	0.01Hz
Preset Speed 8	3	10 [7]	Preset Reference	1%	01	028	Preset Speed 8	0.01Hz

Table 9.1

^{*1} Using parameter 01.014 and the reference selector flags it is possible to cycle between three individual reference sources in the Commander drives. To achieve the full flexibility of the FC 280 the onboard PLC could be used to run a simple reference selection program.





Commander C200/C300 Competitor Migration Guide.

*Invertek Optidrive E3 to
Commander C200/C300*



1.0 Functionality Cross-Reference

The table below provides a cross reference of functionality between the Inverter E3 and the Commander C200/300.

Functionality		
Communications		
MODBUS	✓	Option - KI485 Adapter
CANOpen	✓	Option - SI-CANOpen can be used with frame size 2 drives and above.
DeviceNet™	Optional	Option - SI DeviceNet
PROFIBUS DP	Optional	Option - SI PROFIBUS DP
Reference		
Jog	✓ in preset options	✓
Bi-polar reference	✗	✓
Preset speeds	4	8
Skip frequencies	1	3
Skip frequencies dead band	✓	✓
Local/Remote (Keypad)	✓	✓
Acceleration Rates	1	8
Deceleration Rates	1	8
Run Reverse	✓	✓
Control		
Operating/Application Mode	✓	✗
PM Control	✓	Digitax HD/M600
Control Mode: Linear V/f	✓	✓
Control Mode: Quadratic V/f	✓	✓
BLDC Motor Vector Speed Control	✓	✗
Synchronous Reluctance motor vector speed control	✓	M600
LSPM motor vector speed control	✓	✗
Stator Resistance Compensation	✓	✓
Slip Compensation	✓	✓
Auto-tune	✓	✓
PWM Switching Frequency	4 to 32kHz	0.677 to 16 (0.677 and 1kHz available on Frames 1 to 4 only)
Flying Start /Catch a spinning motor	✓	✓
Stop mode: Ramp	✓	✓
Stop mode: Coast	✓	✓
Stop mode: Fast Ramp	✓	✓
DC Injection Braking	✓	✓
Brake settings (DC bus)	✓	✓
Supply loss detection	✓	✓
50% DC link operation	✓	✓

(Continued)

1.0 Functionality Cross-Reference (continued)



Functionality		
I/O Functions		
Analogue input control	✓	✓
Analogue output control	✓	✓
Temperature monitoring	✓	✓
Digital input control	✓	✓
Digital output control	✓	✓
Relay control	✓	✓
Mechanical brake controller	✓	✓
Motorised pot	✓	✓
Logic function control	✓	✓
Timer function control	✓	✓
Limit switch control	✓	✓
PID control	✓	✓
General		
Displayable Parameters	All	All
Energy meter	✓	✓
Trip time stamping	✓	✓
Previous trip data parameters	10	8
Run time log	✓	✓
Diagnostics	✓	✓
Auto-reset after trip	✓	✓
Power loss ride through	✓	✓
Control word control	✓	✓
Cloning	✓	✓
Security Parameter Lock	✓	✓
I/O		
+10V user output	✓	✓
+24V user output	✓	✓
Digital Inputs	4	5
Digital Outputs	1	1
Analogue Inputs	2	2
Analogue Outputs	1	1
Relay	1	1

Table 1.0



2.0 Model Number Cross-Reference Based on Headline Nominal Power Ratings

Cat No explanation below

Example ODE-3-120023-1012

ODE	-	3	-	1	2	0023	-	1	0	1	2
Product Family	Dash	Generation	Dash	Frame Size	Input Voltage	Output Current X10	Dash	No of Phases	Filter	Dynamic Brake Transistor	IP Rating
	Dash		Dash	1	1=110-115V 2=200-240V 4=380-480V	2.3A	Dash	1	0=No Filter F=Internal EMC Filter	1=not fitted 4= Internal Transistor	2=IP20 X=IP66 Non Switched Y=IP66 Switched

The table below provides a cross-reference between the Invertek Optidrive E3 and the Commander C200/C300 equivalents based on the nominal power rating. Refer to *Section 5.0 Drive Ratings* for a more detailed cross reference including continuous output current.

					
Model Number	kW	Frame Size	Model Number	kW	Frame Size
100V Single Phase					
ODE-3-110023-101_	0.37	1	CXXX-01100024	0.37	1
ODE-3-110043-101_	0.75	1	CXXX-02100042	0.75	2
ODE-3-210058-104_	1.5	2	CXXX-02100056	1.1	2
200V Single Phase					
ODE-3-120023-101_	0.37	1	*CXXX-1200024	0.37	1
ODE-3-120043-101_	0.75	1	*CXXX-1200042	0.75	1
ODE-3-120070-101_	1.5	1	CXXX-2200075	1.5	2
ODE-3-220070-104_	1.5	2			
ODE-3-220105-104_	2.2	2	CXXX-3200100	2.2	3
200V 3 Phase					
ODE-3-120023-301_	0.37	1	*CXXX-02200024	0.37	2
ODE-3-120043-301_	0.75	1	*CXXX-02200042	0.75	2
ODE-3-120070-301_	1.5	1	CXXX-2200075	1.5	2
ODE-3-220070-304_	1.5	2			
ODE-3-220105-304_	2.2	2	CXXX-3200100	2.2	3
ODE-3-320180-304_	4.0	3	CXXX-4200176	4.0	4
ODE-3-320240-304_	5.5	3	CXXX-5200250	5.5	5
ODE-3-420300-304_	7.5	4	CXXX-6200330	7.5	6
ODE-3-420460-304_	11	4	CXXX-6200440	11	6
ODE-3-520610-3F42	15	5	CXXX-7200610	15	7
ODE-3-520720-3F42	18.5	5	CXXX-7200750	18.5	7

(Continued)

* Frame 2 drives with equal power rating to be used if an SI option module is required.

2.0 Model Number Cross-Reference Based on Headline Nominal Power Ratings (continued)



					
Model Number	kW	Frame Size	Model Number	kW	Frame Size
400V					
ODE-3-140022-3_1_	0.75	1	CXXX-2400023	0.75	2
ODE-3-140041-3_1_	1.5	1	CXXX-2400032	1.1	2
ODE-3-240041-3_4_	1.5	2	CXXX-2400041	1.5	2
ODE-3-240058-3_4_	2.2	2	CXXX-3400056	2.2	3
ODE-3-240095-3_4_	4.0	2	CXXX-3400094	4	3
ODE-3-340140-3_4_	5.5	3	CXXX-4400135	5.5	4
ODE-3-340180-3_4_	7.5	3	CXXX-4400170	7.5	4
ODE-3-340240-3_42	11	3	CXXX-5400270	11	5
ODE-3-440300-3_42	15	4	CXXX-5400300	15	5
			CXXX-6400350	15	6
ODE-3-440390-3_42	18.5	4	CXXX-6400420	18.5	6
ODE-3-440460-3_42	22	4	CXXX-6400470	22	6
ODE-3-540610-3_42	30	5	CXXX-7400660	30	7
ODE-3-540720-3_42	37	5	CXXX-7400770	37	7

Table 2.0

3.0 Environmental Conditions

The table below provides a summary on the environmental conditions of the Invertek Optidrive E3 and the Commander C200/C300.



Specification		
Storage temperature	-40 to 60°C	-40°C to 60°C
Operating temperature without de-rate	-10 ... 50°C (frost and condensation free) Max 45°C for UL compliance	-20°C to 40°C
Operating conditions with de-rate	No Data	40°C to 60°C
Humidity	95%, non-condensing	95% Non-condensing
Altitude	2000m. De-rate above 1000m: 1% / 100m	1000m – No de-rate 1000m to 3000m - 1% de-rate/100m
IP Rating	IP20 IP66	IP20 – Pollution degree 2 IP66 - Pump drive F600
Vibration	No data provided	Testing in each of three mutually perpendicular axes in turn. Referenced standard: IEC 60068-2-6: Test Fc: Frequency range: 5 to 500 Hz Severity: 3.5 mm peak displacement from 5 to 9 Hz 10 m/s ² peak acceleration from 9 to 200 Hz 15 m/s ² peak acceleration from 200 to 500 Hz
Harsh Environments	No data provided	IEC60721-3-3 3C3 EN60068-2-60

Table 3.0

4.0 Electromagnetic Compatibility (EMC)

The table below provides a summary on the EMC standards supported by the Invertek Optidrive E3 and the Commander C200/C300.



Immunity Compliance		
IEC 61000-4-2 Electrostatic Discharge	2014/30/EU EMC Directive (EMC)	Supported
IEC 61000-4-3 Radio frequency radiated field	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-4-4 Fast Transient Burst	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-4-5 Surges	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-4-6 Conducted Radio Frequency	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-4-11 Voltage Dips and Interruptions	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-6-1 Generic immunity standard for the residential, commercial and light industrial environments	Indirectly via 2014/30/EU EMC Directive (EMC)	Supported
IEC61000-6-2 Generic immunity standard for the industrial environment	Indirectly via 2014/30/EU EMC Directive (EMC)	Supported
IEC 61800-3 Immunity Requirements for adjustable speed power drive systems	Supported	Supported

Table 4.0

5.0 Approvals

The table below provides a summary on the approvals the Invertek Optidrive E3 and the Commander C200/C300 adhere too.

Approvals		
UL	Supported	Supported
C tick	Supported	Supported
ROHS	Supported	Supported
CE	Supported	Supported

Table 5.0

6.0 Drive Ratings

The drive rating tables featured below conform to the terminology used in the Inverter Optidrive E3 Installation Manual.

6.1 100V Ratings Based on Model Number Cross-Reference



										
Model No.	kW	HP	Nominal Output Current A	Max. Overload Current 175% for 2s A	Model No.	kW @ 230V	HP @ 230V	Maximum cont. Output Current A	Open Loop Peak Current A	RFC Peak Current A
ODE-3-110023-101_	0.37	0.5	2.3	4.0	CXXX-01100024	0.37	0.5	2.4	3.6	4.3
ODE-3-110043-101_	0.75	1	4.3	7.5	CXXX-02100042	0.75	1	4.2	6.3	7.6
ODE-3-210058-104_	1.5	1.5	5.8	10.15	CXXX-02100056	1.1	1.5	5.6	8.4	10.1

Table 6.0

Inverter Optidrive E3 values based on effective switched frequency of 8kHz

Commander CXXX values based on 3kHz

6.2 200V Single Phase Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the **200V single phase drives** ratings between the Inverter Optidrive E3 and the Commander C200/C300.



											
Model No.	kW	HP	Nominal Output Current A	Max. Transient Current 175% for 2s A	Model No.	kW @ 230V	HP @ 230V	Max cont. Output Current A	Open Loop Peak Current A	RFC Peak Current A	Phase supply
ODE-3-120023-101_	0.37	0.5	2.3	4.0	01200024	0.37	0.5	2.4	3.6	4.3	1
ODE-3-120043-101_	0.75	1.0	4.3	7.5	01200042	0.75	1.0	4.2	6.3	7.6	1
ODE-3-120070-101_	1.5	2.0	7.0	12.25	02200075	1.5	2.0	7.5	11.3	13.5	1/3
ODE-3-220070-104_	1.5	2.0	7.0	12.25							
ODE-3-220105-104_	2.2	3.0	10.5	18.37	03200100	2.2	3.0	10.0	15.0	18.0	1/3
					04200133	3.0	3.0	13.3	20.0	23.9	1/3

Table 6.1

Inverter Optidrive E3 values based on effective switched frequency of 8kHz

Commander CXXX values based on 3kHz

6.3 200V Three Phase Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the 200V three phase supplied Drives rating between the Invertek Optidrive E3, and the Commander C200/C300.



											
Model No.	kW	HP	Nominal Output Current A	Max. Transient 175% for 2s Current A	Model No.	kW @ 230V	HP @ 230V	Max cont. Output Current A	Open Loop Peak Current A	RFC Peak Current A	Phase supply
ODE-3-120023-301_	0.37	0.5	2.3	4	02200024	0.37	0.5	2.4	3.6	4.3	1/3
ODE-3-120043-301_	0.75	1	4.3	7.5	02200042	0.75	1	4.2	6.3	7.6	1/3
					02200056	1.1	1.5	5.6	8.4	10.1	1/3
ODE-3-120070-301_ ODE-3-220070-304_	1.5	2	7.0	12.25	02200075	1.5	2	7.5	11.3	13.5	1/3
ODE-3-220105-304_	2.2	3	10.5	18.37	03200100	2.2	3	10.0	15	18	1/3
					04200133	3	3	13.3	20	23.9	1/3
ODE-3-320180-304_	4.0	5	18	31.5	04200176	4.0	5.0	17.6	26.4	31.7	3
ODE-3-320240-304_	5.5	7.5	24	42	05200250	5.5	7.5	25.0	37.5	50.0	3
ODE-3-420300-304_	7.5	10	30	52.5	06200330	7.5	10	33.0	49.5	66.0	3
ODE-3-420460-304_	11	15	46	80.5	06200440	11	15	44.0	66.0	88.0	3
ODE-3-520610-3F42	15	20	61	106.75	07200610	15	20	61	91.5	122	3
ODE-3-520720-3F42	18.5	25	72	126	07200750	18.5	25	75	112.5	150	3

Table 6.2

Invertek Optidrive E3 values based on effective switched frequency of 8kHz

Commander CXXX values based on 3kHz

6.4 400V Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the **400V drive ratings** between the Invertek Optidrive E3 and the Commander C200/C300 drives.



										
Model No.	kW	HP	Nominal Output Current A	Max. Transient 175% for 2s Current A	Model No.	kW @ 400V	HP @ 460V	Max cont. Output Current A	Open Loop Peak Current A	RFC Peak Current A
ODE-3-140022-3_1_	0.75	1	2.2	3.85	02400023	0.75	1.0	2.3	3.5	4.1
ODE-3-140041-3_1_	1.5	2	4.1	7.175	02400041	1.5	2.0	4.1	6.2	7.4
ODE-3-240041-3_4_	1.5	2	4.1	7.175	02400041	1.5	2.0	4.1	6.2	7.4
ODE-3-240058-3_4_	2.2	3	5.8	10.15	03400056	2.2	3.0	5.6	8.4	10.1
					03400073	3.0	3.0	7.3	11.0	13.1
ODE-3-240095-3_4_	4.0	5	9.5	16.6	03400094	4.0	5.0	8.4	14.1	16.9
					04400135	5.5	7.5	13.5	20.3	24.3
ODE-3-340140-3_4_	5.5	7.5	14	24.5	04400135	5.5	7.5	13.5	20.3	24.3
ODE-3-340180-3_4_	7.5	10	18	31.5	04400170	7.5	10.0	17	25.5	30.6
ODE-3-340240-3_42	11	15	24	42	05400270	11.0	20.0	27.0	40.5	54.0
ODE-3-440300-3-42	15	20	30	52.5	05400300	15.0	20.0	30.0	45.0	60.0
ODE-3-440390-3_42	18.5	25	39	68.25	06400350	18.5	25.0	35.0	52.5	70.0
					06400420	22.0	30.0	42.0	63.0	84.0
					06400470	30.0	40.0	47.0	70.5	94.0
ODE-3-540610-3_42	30	40	61	106.75	07400660	30	50	66	99	132
ODE-3-540720-3_42	37	50	72	126	07400770	37	60	100	115.5	154

Table 6.3

Invertek Optidrive E3 values based on effective switched frequency of 8kHz

Commander CXXX values based on 3kHz

6.5 Braking Resistor Ratings

Based on the equivalent drives specified in table 2, this section provides details on the braking resistor specifications for the Invertek Optidrive E3 and the Commander C200/C300. The Brake IGBT on the Frame 1 OptiDrive is not fitted.



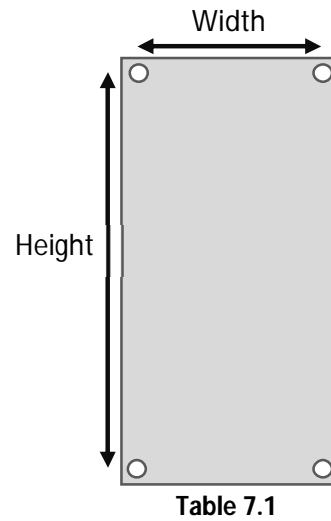
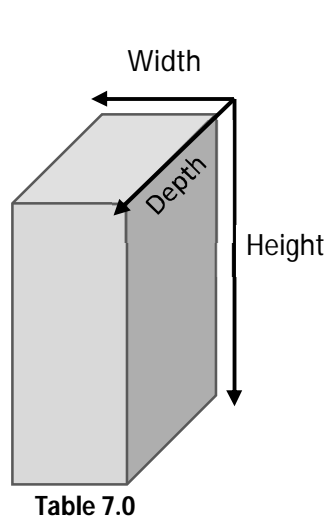
							
Model Number	Minimum Resistance Ω	Instantaneous power kW	Continuous power kW	Model Number	Minimum Resistance Ω	Instantaneous power kW	Continuous power kW
100V Single Phase Drives							
ODE-3-210058-104	100	12	0.2	CXXX-2100056	68	2.2	1.1
200V Single Phase Drives							
ODE-3-220070-104-	100	12	0.2	CXXX-2200075	68	2.2	1.5
ODE-3-220105-104-	100	12	0.2	CXXX-3200100	45	3.3	2.2
ODE-3-320153-104-	100	12	0.2	CXXX-4200133	22	6.0	3
200V Three Phase Drives							
ODE-3-220070-304-	100	12	0.2	CXXX-2200075	68	2.2	1.5
ODE-3-220105-304-	100	12	0.2	CXXX-4200133	22	6.0	3
ODE-3-320180-304_	100	12	0.2	CXXX-4200176	22	6.0	4
ODE-3-320240-304_	100	12	0.2	CXXX-5200250	19	8.9	8.6
ODE-3-420300-304_	22	21	0.5	CXXX-6200330	10	16.9	12.6
ODE-3-420460-304_	22	21	0.5	CXXX-6200440	10	16.9	16.4
ODE-3-520610-3F42	22	21	0.5	CXXX-7200610	4.5	37.6	15
ODE-3-520720-3F42	22	21	0.5	CXXX-7200750	4.5	37.6	18.5
400V Drives							
ODE-3-240041-3_4_	100	12	0.2	CXXX-2400041	270	2.2	1.5
ODE-3-240058-3_4_	100	12	0.2	CXXX-3400056	100	6.0	2.2
				CXXX-3400073	100	6.0	3
ODE-3-240095-3_4_	100	12	0.2	CXXX-3400094	100	6.0	4
ODE-3-340140-3_4_	100	12	0.2	CXXX-4400135	50	11.2	5.5
ODE-3-340180-3_4_	100	12	0.2	CXXX-4400170	50	11.2	7.5
ODE-3-340240-3_4-	100	12	0.2	CXXX-5400270	38	17.8	16.2
ODE-3-440300-3-4-	22	21	0.5	CXXX-5400300	22	30.8	19.6
				CXXX-6400350	20	33.8	21.6
ODE-3-440390-3_42	22	21	0.5	CXXX-6400420	20	33.8	25
ODE-3-440460-3_42	22	21	0.5	CXXX-6400470	20	33.8	32.7
ODE-3-540610-3F42	22	21	0.5	CXXX-7400660	7.5	90.2	30
ODE-3-540720-3F42	22	21	0.5	CXXX-7400770	7.5	90.2	37

Table 6.4

7.0 Mechanical Installation

Based on the equivalent drives specified in table 2.0, this section provides details on the dimension differences between the Invertek Optidrive E3 and the Commander C200/C300. The dimensions are listed in tables 7.0 and 7.1 are based on the dimensions in the diagrams below.



7.1 Overall Dimensions and Weight

Based on the equivalent drives specified in table 2, this section provides details on the mounting dimension differences between the Invertek Optidrive E3 and the Commander C200/C300. The Invertek Optidrive E3 has multiple depths and weights per frame size (1 to 5) based on the power rating. For simplicity, frame sizes have been condensed to those with unique mounting dimensions and the maximum depth and weights for that frame size have been listed.

									
Frame	Height	Width	Depth	Weight	Frame	Height	Width	Depth	Weight
1	173mm (6.81in)	83mm (3.27in)	123mm (4.84in)	1.0kg (2.2lb)	1	160mm (6.3in)	75mm (2.95in)	130mm (5.1in)	0.75kg (1.85lb)
2	221mm (8.7in)	110mm (4.33in)	150mm (5.91in)	1.7kg (3.75lb)	2	205mm (8.07in)	75mm (2.95in)	150mm (5.9in)	1.3kg (3.00lb)
3	261mm (10.28in)	131mm (5.16in)	175mm (6.89in)	3.2kg (7.05lb)	3	226mm (8.9in)	90mm (3.54in)	160mm (6.3in)	1.5kg (3.30lb)
4	420mm (16.54in)	171mm (6.73in)	212mm (8.35in)	9.1kg (20.6lb)	4	277mm (10.9in)	115mm (4.53in)	175mm (6.89in)	3.13kg (6.90lb)
5	486mm (19.13in)	222mm (8.74in)	226mm (8.9in)	18.1kg (39.9lb)	5	365mm (14.37in)	143mm (5.63in)	200mm (7.87in)	7.4kg (16.30lb)
					6	365mm (14.37in)	210mm (8.27in)	227mm (8.94in)	14kg (30.90lb)
					7	508mm (20.0in)	270mm (10.63in)	280mm (11.02in)	28kg (61.70lb)

Table 7.0

7.2 Mounting Hole Dimensions

Based on the equivalent drives specified in table 2, this section provides details on the mounting hole dimension differences between the Invertek Optidrive E3 and the Commander C200/C300.

							
Frame	Height	Width	Mounting Bolt	Frame	Height	Width	Mounting Holes
1	162mm (6.38in)	50mm (1.97in)	4 X Ø8mm (4 X Ø0.31in)	1	143mm (5.70in)	53mm (2.08in)	4 x Ø5mm (4 x Ø0.2in)
2	209mm (8.23in)	63mm (2.48in)	4 X Ø8mm (4 X Ø0.31in)	2	194mm (7.63in)	55mm (2.17in)	4 x Ø5mm (4 x Ø0.2in)
3	247mm (9.72in)	80mm (3.15in)	4 X Ø8mm (4 X Ø0.31in)	3	215mm (8.46in)	70.7mm (2.80in)	4 x Ø5mm (4 x Ø0.2in)
4	400mm (15.75in)	125mm (4.92in)	4 X Ø8mm (4 X Ø0.31in)	4	265mm (10.43in)	86mm (3.40in)	4 x Ø6mm (4 x Ø0.23in)
5	463mm (18.22in)	175mm (6.88in)	4 X Ø8mm (4 X Ø0.31in)	5	375mm (14.76in)	106mm (4.17in)	4 x Ø6.5mm (4 x Ø0.26in)
				6	378mm (14.88in)	196mm (7.72in)	4 x Ø7mm (4 x Ø0.27in)
				7	538mm (21.18in)	220mm (8.66in)	4 x Ø9mm (4 x Ø0.27in)

Table 7.1

7.3 Frame Size/Voltage Alignment

	
100V Single Phase	
1	1 / 2
2	2
200V Single Phase	
1	1 / 2
2	2 / 3
200V 3 Phase	
1	1 / 2
2	2 / 3
3	4 / 5
4	6
400V	
1	2
2	2 / 3
3	4 / 5
4	5 / 6
5	7

Table 7.3

7.4 Mounting Clearance

			
Temperature is Dependant on mounting criteria			
Frame size	Dimension	Distance	100mm (50mm where ambient temp is 35°C or less, or the average Output Current is derated by 20%)
1	Above	50mm (1.97in)	
	Between Drives	33mm (1.30in)	
	Sides	50mm (1.97in)	
	Below	50mm (1.97in)	
2	Above	75mm (2.95in)	
	Between Drives	46mm (1.81)	
	Sides	50mm (1.97in)	
3 & 4	Below	75mm (2.95in)	
	Above	100mm (3.94in)	
	Between Drives	52mm (2.05in)	
	Sides	50mm (1.97in)	
5	Below	100mm (3.94in)	
	Above	200mm (7.87in)	
	Between Drives	70mm (2.76in)	
	Sides	25mm (0.98in)	
	Below	200mm (7.87in)	

Table 7.4

8.0 Electrical Installation

8.1 Power Specifications

The table below provides a cross-reference of power specifications between the Invertek Optidrive E3 and the Commander C200/C300.



Specification		
Input Voltage Range	100V to 120V ($\pm 10\%$) 200V to 240V ($\pm 10\%$) 380V to 480V ($\pm 10\%$)	100V to 120V ($\pm 10\%$) 200V to 240V ($\pm 10\%$) 380V to 480V ($\pm 10\%$) 500 V to 575 V ($\pm 10\%$) 500 V to 690 V ($\pm 10\%$)
Input Frequency Range	48 to 62Hz	44 to 66Hz
Output Overload Rating	150% for 60 Seconds 175% for 2.5 seconds	150% for 60s, 180% for 3 s (RFC-A)
Output Frequency Range	0 to 500Hz	0 to 599Hz
Output Switching Frequency Range	4 to 32kHz Effective	0.667kHz to 16kHz*
Headline Rating Switching Frequency	8kHz	3kHz

Table 8.0

* 0.667kHz and 1kHz switching frequencies available on frame size 1 to 4 only.

8.2 Power Connections

The table below provides a cross-reference of power terminals between the Invertek Optidrive E3 and the Commander C200/C300. Refer to the product user guide for fusing and cable information.

		
Function	Terminal No.	Terminal No.
Supply L1	L1/L	L1
Supply L2	L2/N	L2-N / L2
Supply L3	L3	L3
Motor U phase	U	U
Motor V Phase	V	V
Motor W Phase	W	W
Braking	DC-	+
	BR	BR
Earth	⊥	⊥

Table 8.1

8.3 Control Connections

The table below provides a cross-reference of control connections between the Invertek Optidrive E3 and the Commander C200/C300. Direction connection replacements are indicated via an arrow. For more information on the STO and other terminals refer to the individual drive's installation manual.



Default Function		
	Terminal No.	Terminal No.
0V Common	7 or 9	1
Analogue Input 1	6	5
+10V User Output	5	4
4-20mA Analogue Input	4	2
Analogue Output 1	8	7
+24V User Output	1	9
Digital Input 1 (Stop via Macro)	2	11 (Enable Default)
Digital Input 2	3	10 (I/O) Terminal 10 on the Commander can be configured as a digital input or as a digital output
Digital Input 3	4	12
Digital Input 4	6	13
Digital Output	8	10 (I/O) * ¹
Relay Common	10	41
Relay Normally Open Contact	11	42

Table 8.2

*¹ Commander C200/C300 I/O P8.031 would need declaring as an Output

9.0 Parameter Compare

9.1 Motor Data Parameter Comparison

The table below provides a cross reference between key parameters required for motor setup in the Invertek Optidrive E3 and Commander C200/C300. If a parameter in the Invertek Optidrive E3, does not have an equivalent parameter in the Commander C200/C300 details will be provided how similar functionality can be achieved.



Parameter Function								
	Parameter Location		Parameter Name	Units / Options	Parameter Location		Parameter Name	Units / Options
	Menu	Parameter			Menu	Parameter		
Motor Rated Voltage	Standard	P-06	Motor Rated Voltage	1V	0	08	Motor Rated Voltage	1V
Motor Rated Current	Standard	P-08	Motor Rated Current	0.1A	0	06	Motor Rated Current	0.01A
Motor Rated Frequency	Standard	P-09	Motor Rated Frequency	1Hz	5	006	Motor Rated Frequency	0.01Hz
Motor Rated Speed	Standard	P-10	Motor Rated Speed	1rpm	0	07	Motor Rated Speed	0.1rpm
Torque Performance Mode	Standard	P-13	Operating Mode	Menu Options	0	79	User Drive Mode	Menu Options
Motor Control Mode	Advanced	P-51	Motor Control Mode	Menu Options	0	79	User Drive Mode (Only Open Loop and RCFA Modes)	Menu Options
Auto Tune	Advanced	P-52	Motor Parameter Autotune	Menu Options	5	012	Auto-tune	Menu Options
Low Frequency Torque Boost	Standard	P-11	Low Frequency Torque Boost	Menu Options	5	015	Low Frequency Voltage Boost	Menu Options

Table 9.0

9.2 Application Parameter Comparison

The table below provides a cross reference between key parameters required for application setup in the Invertek Optidrive E3 and Commander C200/C300. If a parameter in the Invertek Optidrive E3 does not have an equivalent parameter in the Commander C200/C300 details will be provided on how similar functionality can be achieved.



Parameter Function								
	Parameter Location		Parameter Name	Units	Parameter Location		Parameter Name	Units
	Menu	Parameter			Menu	Parameter		
Minimum Frequency	Standard	P-02	Minimum Frequency/Speed Limit	Hz/RPM	0	01	Minimum Frequency	0.01Hz
Maximum Frequency	Standard	P-01	Maximum Frequency/Speed Limit	Hz/RPM	0	02	Maximum Frequency	0.01Hz
Acceleration Rate	Standard	P-03	Acceleration Ramp Time	s	0	03	Acceleration Rate 1	0.1s
Deceleration Rate	Standard	P-04	Deceleration Ramp Time	s	0	04	Deceleration Rate 1	0.1s
Primary Command Source	Standard	P-12	Primary Command Source	Menu Options	1	014	Reference Selector	Menu Options
					6	042	Control Word	
					1	043	Control Word Enable	
Operating Mode Select	Standard	P-13	Operating Mode Select	Menu Options	5	014	Open Loop Voltage Mode	Menu Options
					5	015	Low Freq Voltage Boost	
Reference Selector	Basic	P-12	Macro Function Terminal Mode	Menu Options	1	014	Reference Selector	Menu Options
Stop Mode Configuration	Standard	P-05	Stopping Mode/Mains Loss	Menu Options	0	031	Stop Mode	Menu Options
					6	003	Supply Loss Mode	
Preset Speed 1	Standard	P-20	Preset Frequency/Speed 1	Hz/RPM	0	18	Preset Speed 1	0.01Hz
Preset Speed 2	Standard	P-21	Preset Frequency/Speed 2	Hz/RPM	0	19	Preset Speed 2	0.01Hz
Preset Speed 3	Standard	P-22	Preset Frequency/Speed 3	Hz/RPM	0	20	Preset Speed 3	0.01Hz
Preset Speed 4	Standard	P-23	Preset Frequency/Speed 4	Hz/RPM	0	21	Preset Speed 4	0.01Hz
Start a Rotating Motor	Standard	P-33	Spin Start	Menu Options	6	009	Catch a Spinning Motor	Menu Options

Table 9.1



Commander C200/C300 Competitor Migration Guide.

*ABB ACS380 to
Commander C200/C300*



1.0 Functionality Cross-Reference

The table below provides a cross reference of functionality between the ABB ACS380 and the Commander C200/300.

Functionality		
Communications		
MODBUS	✓	Option *1
Reference		
Jog	✓	✓
Bi-polar reference	✓	✓
Preset speeds	7	8
Skip frequencies	3	3
Skip frequencies dead band	✓	✓
Local/Remote	✓	✓
S-Ramp	✓	✓
Acceleration Rates	2	8
Deceleration Rates	2	8
Pulse Train Frequency Reference	10Hz to 16kHz	0 to 100kHz
Run Reverse	✓	✓
Torque reference	✓	✓
Control		
PM Control	✓	Unidrive M600
Control Mode: Linear V/f	✓	✓
Control Mode: Quadratic V/f	✓	✓
Control Mode: Dynamic V/f	✓	✓
Stator Resistance Compensation	✓	✓
Slip Compensation	✓	✓
Auto-tune: Static	✓	✓
Auto-tune: Rotating	✓	✓
Switching Frequency	1.5 to 12kHz	0.677 to 16*2
Catch a spinning motor	✓	✓
Stop mode: Ramp	✓	✓
Stop mode: Coast	✓	✓
Stop mode: Torque Limit	✓	✓
DC Injection Braking	✓	✓
Brake settings (DC bus)	✓	✓
Cooling fan control	✓	✓
Motor pre-heat control	✓	✓
Supply loss detection	✓	✓
Low DC link operation	✓	✓

(Continued)

*1 KI485 Adapter

*2 0.667kHz and 1kHz switching frequencies available on frame size 1 to 4 only.

1.0 Functionality Cross-Reference (continued)



Functionality		
I/O Functions		
Analogue input control	✓	✓
Analogue output control	✓	✓
Temperature monitoring	✓	✓
Digital input control	✓	✓
Digital output control	✓	✓
Relay control	✓	✓
Mechanical brake controller	✓	✓
Motorised pot	✓	✓
Logic function control	✓	✓
Timer function control	✓	✓
Limit switch control	✓	✓
Threshold detection	✓	✓
Variable selector	✓	✓
PID control	✓	✓
General		
Displayable Parameters	All read-only	All
Energy meter	✓	✓
Trip time stamping	✓	✓
Previous trip data parameters	3	8
Run time log	✓	✓
Diagnostics	✓	✓
Auto-reset after trip	✓	✓
Power loss ride through	✓	✓
Control word control	✓	✓
Cloning	✓	✓
Security	✓	✓
Spare application parameters	12	64
Speed Feedback	✓	Option ^{*3}
I/O		
+10V user output	✓	✓
+24V user output	✓	✓
Enable	✓	✓
Safe Torque Off	SIL 3	SIL 3 ^{*4}
Digital Inputs	4	4
Digital Inputs/Outputs	2	1
Digital Outputs	0	0
Analogue Inputs	2	2
Analogue Outputs	1	1
Relay	1	1

Table 1.0

^{*3} SI-Encoder can be used with frame size 2 drives and above.

^{*4} SIL 3 achievable on C300 only using the dual STO inputs.

2.0 Model Number Cross-Reference Based on Headline Nominal Power Ratings

The table below provides a cross-reference between the ABB ACS380 and the Commander C200/C300 equivalents based on the nominal power rating. Refer to *Section 5.0 Drive Ratings* for a more detailed cross reference including continuous output current.



					
Model Number	kW	Frame Size	Model Number	kW	Frame Size
200V					
02A4-1	0.37	R0	CXXX-1200024* ¹	0.37	1
03A7-1	0.55	R0	CXXX-1200033* ¹	0.55	1
02A4-2	0.37	R1	CXXX-1200024* ¹	0.37	1
03A7-2	0.55	R1	CXXX-1200033* ¹	0.55	1
04A8-__	0.75	R1	CXXX-1200042* ¹	0.75	1
06A9-__	1.1	R1	CXXX-2200056	1.1	2
07A8-__	1.5	R1	CXXX-2200075	1.5	2
09A8-__	2.2	R1	CXXX-3200100	2.2	3
12A2-__	3.0	R2	CXXX-4200133	3.0	4
17A5-__	4.0	R3	CXXX-4200176	4.0	4
25A0-__	5.5	R3	CXXX-5200250	5.5	5
032A-__	7.5	R4	CXXX-6200330	7.5	6
048A-__	11.0	R4	CXXX-6200440	11.0	6
055A-__	15.0	R4	CXXX-7200610	15.0	7
400V					
01A8-4	0.55	R0	CXXX-2400018	0.55	2
02A6-4	0.75	R1	CXXX-2400023	0.75	2
03A3-4	1.1	R1	CXXX-2400032	1.1	2
04A0-4	1.5	R1	CXXX-2400041	1.5	2
05A6-4	2.2	R1	CXXX-3400056	2.2	3
07A2-4	3.0	R1	CXXX-3400073	3.0	3
09A4-4	4.0	R1	CXXX-3400094	4.0	3
12A6-4	5.5	R2	CXXX-4400135	5.5	4
17A0-4	7.5	R3	CXXX-4400170	7.5	4
25A0-4	11.0	R3	CXXX-5400270	11	5
032A-4	15.0	R4	CXXX-5400300	15	5
			CXXX-6400350	15	6
038A-4	18.5	R4	CXXX-6400420	18.5	6
045A-4	22.0	R4	CXXX-6400470	22	6
050A-4	22.0	R4	CXXX-7400660	30	7

Table 2.0

*¹ Frame 2 drives with equal power rating to be used if an SI option module is required.

3.0 Environmental Conditions

The table below provides a summary on the environmental conditions of the ABB ACS380 and the Commander C200/C300.



Specification		
Storage temperature	-40°C to 70°C ±2%	-40°C to 60°C
Operating temperature without de-rate	-10°C to 50°C No frost allowed.	-20°C to 40°C
Operating conditions with de-rate	50 to 60 °C (except Frame Size R0).	40°C to 60°C
Humidity	95% Non-condensing	95% Non-condensing
Altitude	230V: 0 to 2000 m 230V: 1% per 100m de-rate above 1000 m 400V: 0 to 4000 m 400V: 1% per 100m de-rate above 1000 m	1000m – No de-rate 1000m to 3000m - 1% per 100m de-rate above 1000 m
IP Rating	IP20 – Pollution degree 2	IP20 – Pollution degree 2
Vibration	Tested according to IEC 60721-3-3, mechanical conditions: Class 3M4 2...9 Hz, 3.0 mm (0.12 in) 9...200 Hz, 10 m/s ² (33 ft/s ²) No shock allowed	Testing in each of three mutually perpendicular axes in turn. Referenced standard: IEC 60068-2-6: Test Fc: Frequency range: 5 to 500 Hz Severity: 3.5 mm peak displacement from 5 to 9 Hz 10 m/s ² peak acceleration from 9 to 200 Hz 15 m/s ² peak acceleration from 200 to 500 Hz
Harsh Environments	According to IEC 60721-3-3, chemical gases: Class 3C2. Solid particles: Class 3S2.	IEC60721-3-3 3C3 EN60068-2-60

Table 3.0

4.0 Electromagnetic Compatibility (EMC)

The table below provides a summary on the EMC standards supported by the ABB ACS380 and the Commander C200/C300.



Immunity Compliance		
IEC 61000-4-2 Electrostatic Discharge	No data provided	Supported
IEC 61000-4-3 Radio frequency radiated field	No data provided	Supported
IEC61000-4-4 Fast Transient Burst	No data provided	Supported
IEC61000-4-5 Surges	No data provided	Supported
IEC61000-4-6 Conducted Radio Frequency	No data provided	Supported
IEC61000-4-11 Voltage Dips and Interruptions	No data provided	Supported
IEC61000-6-1 Generic immunity standard for the residential, commercial and light industrial environments	No data provided	Supported
IEC61000-6-2 Generic immunity standard for the industrial environment	No data provided	Supported
IEC 61800-3 Immunity Requirements for adjustable speed power drive systems	Supported	Supported

Table 4.0

5.0 Approvals

The table below provides a summary on the approvals the ABB ACS380 and the Commander C200/C300 adhere too.



Approvals		
CSA	Supported	Supported
UL	Supported	Supported
RCM	Supported	Supported
EAC	Supported	Supported
CE	Supported	Supported
DNV	Not Supported	Currently under approval
KC	Not Supported	Supported
TUV	Supported	Supported

Table 5.0

6.0 Drive Ratings

The drive rating tables featured below conform to the terminology used in the ABB ACS380 Hardware Manual. The nominal output current listed in the tables would be equivalent to the maximum continuous output current list in the Control Techniques documentation.

6.1 200V Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the 200V drive ratings between the equivalent ABB ACS380 and the Commander C200/C300.



														
Model No.	Nominal		Light Duty Use		Heavy Duty Use		Max Current	Model No.	Heavy Duty		Normal Duty		Max Current	
	I _N (A)	P _N (kW)	I _{Ld} (A)	P _{Ld} (kW)	I _{Hd} (A)	P _{Hd} (kW)	I _{Max} (A)		I _N (A)	P _N (kW)	I _{Ld} (A)	P _{Ld} (kW)	I _{Max} Open Loop (A)	I _{Max} RFC-A (A)
02A4-1	2.4	0.37	2.3	0.37	1.8	0.25	3.2	01200024	2.4	0.37	Heavy Duty Ratings Only		3.6	4.3
03A7-1	3.7	0.55	3.5	0.55	2.4	0.37	4.3	01200033	3.3	0.55			5	5.9
02A4-2	2.4	0.37	2.3	0.37	1.2	0.25	2.2	01200024	2.4	0.37			3.6	4.3
03A7-2	3.7	0.55	3.5	0.55	1.8	0.37	3.2	01200033	3.3	0.55			5	5.9
04A8-__	4.8	0.75	4.6	0.75	3.7	0.55	6.7	01200042	4.2	0.75			6.3	7.6
06A9-__	6.9	1.1	6.6	1.1	4.8	0.75	8.6	02200056	5.6	1.1			8.4	10.1
07A8-__	7.8	1.5	7.4	1.5	6.9	1.1	12.4	02200075	7.5	1.5			11.3	13.5
09A8-__	9.8	2.2	9.3	2.2	7.8	1.5	14.0	03200100	10	2.2			15	18
12A2-__	12.2	3.0	11.6	3.0	9.8	2.2	17.6	04200133	13.3	3			20	23.9
17A5-__	17.5	4.0	16.7	4.0	12.2	3.0	22.0	04200176	17.6	4			26.4	31.7
25A0-__	25.0	5.5	24.2	5.5	17.5	4.0	31.5	05200250	25	5.5	30	7.5	37.5	50
032A-__	32.0	7.5	30.8	7.5	25.0	5.5	45.0							
048A-__	48.0	11.0	46.2	11.0	32.0	7.5	57.6	06200330	33	7.5	50	11	49.5	66
055A-__	55.0	15.0	52.8	15.0	48.0	11.0	86.4	06200440	44	11	58	15	66	88
								07200610	61	15	75	18.5	91.5	122

Table 6.0

ABB ACS380 values at 4kHz

Commander CXXX values based on 3kHz

6.2 400V Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the 400V drive ratings between the equivalent ABB ACS380 and the Commander C200/C300 drives.



															
Model No.	Nominal		Light Duty Use		Heavy Duty Use		Max Current	Model No.	Heavy Duty		Normal Duty		Max Current		
	I _N (A)	P _N (kW)	I _{Ld} (A)	P _{Ld} (kW)	I _{Hd} (A)	P _{Hd} (kW)	I _{Max} (A)		I _N (A)	P _N (kW)	I _{Ld} (A)	P _{Ld} (kW)	I _{Max} Open Loop (A)	I _{Max} RFC-A (A)	
01A8-4	1.8	0.55	1.7	0.55	1.2	0.37	2.2	02400013	1.3	0.37	Heavy Duty Ratings Only		2	2.3	
02A6-4	2.6	0.75	2.5	0.75	1.8	0.55	3.2	02400018	1.8	0.55			2.7	3.2	
03A3-4	3.3	1.1	3.1	1.1	2.6	0.75	4.7	02400023	2.3	0.75			3.5	4.1	
04A0-4	4.0	1.5	3.8	1.5	3.3	1.1	5.9	02400032	3.2	1.1			4.8	5.8	
05A6-4	5.6	2.2	5.3	2.2	4.0	1.5	7.2	02400041	4.1	1.5			6.2	7.4	
07A2-4	7.2	3.0	6.8	3.0	5.6	2.2	10.1	03400056	5.6	2.2			8.4	10.1	
09A4-4	9.4	4.0	8.9	4.0	7.2	3.0	13.0	03400073	7.3	3.0			11.0	13.1	
12A6-4	12.6	5.5	12.0	5.5	9.4	4.0	16.9	03400094	8.4	4.0			14.1	16.9	
17A0-4	17.0	7.5	16.2	7.5	12.6	5.5	22.7	04400135	13.5	5.5			20.3	24.3	
25A0-4	25.0	11.0	23.8	11.0	17.0	7.5	30.6	04400170	17	7.5			25.5	30.6	
032A-4	32.0	15.0	30.5	15.0	25.0	11.0	45.0	05400270	27.0	11.0	30	15	40.5	54.0	
								05400300	30.0	15.0	31	15	45.0	60.0	
038A-4	38.0	18.5	36.0	18.5	32.0	15.0	57.6	06400350	35.0	15.0	38	18.5	52.5	70.0	
045A-4	45.0	22.0	42.8	22.0	38.0	18.5	68.4	6400420	42	18.5	48	22	63	84	
050A-4	50.0	22.0	48.0	22.0	45.0	22.0	81.0	6400470	47	22	63	30	70.5	94	

Table 6.1

ABB ACS380 values at 4kHz

Commander CXXX values based on 3kHz

6.3 Braking Resistor Ratings

Based on the equivalent drives specified in table 2, this section provides details on the braking resistor specifications for the ABB ACS380 and the Commander C200/C300.



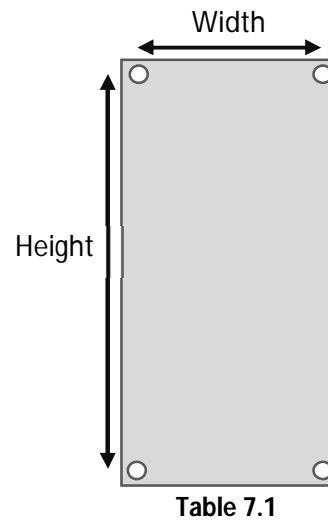
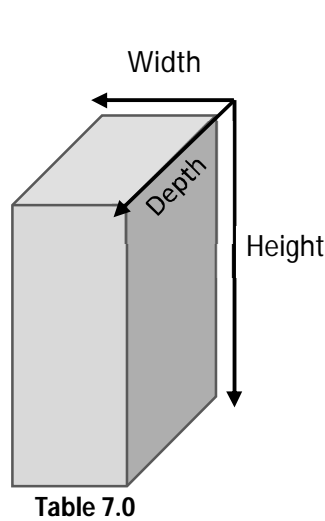
							
Model Number	Minimum Resistance (Ω)	Instantaneous power (kW)	Continuous power (kW)	Model Number	Minimum Resistance (Ω)	Instantaneous power (kW)	Continuous power (kW)
02A4-1	32.5	0.38	0.25	1200024	130	1.1	0.37
03A7-1	32.5	0.56	0.37	1200033	130	1.1	0.55
04A8-1	32.5	0.83	0.55	1200042	130	1.1	0.75
06A9-1	32.5	1.10	0.75	2200056	68	2.2	1.1
07A8-1	32.5	1.70	1.10	2200075	68	2.2	1.5
09A8-1	32.5	2.30	1.50	3200100	45	3.3	2.2
12A2-1	19.5	3.30	2.20	4200133	22	6	3
200V							
02A4-2	39	0.38	0.25	CXXX-2200024	68	2.2	0.37
03A7-2	39	0.56	0.37	CXXX-2200033	68	2.2	0.55
04A8-2	39	0.83	0.55	CXXX-2200042	68	2.2	0.75
06A9-2	39	1.13	0.75	CXXX-2200056	68	2.2	1.1
07A8-2	39	1.65	1.10	CXXX-2200075	68	2.2	1.5
09A8-2	20	2.25	1.50	CXXX-3200100	45	3.3	2.2
12A2-2	20	3.30	2.20	CXXX-4200133	22	6.0	3
17A5-2	16	4.50	3.00	CXXX-4200176	22	6.0	4
25A0-2	16	6.00	4.00	CXXX-5200250	19	8.9	8.6
032A-2	3	8.25	5.50	CXXX-6200330	10	16.9	12.6
048A-2	3	11.25	7.50	CXXX-6200440	10	16.9	16.4
055A-2	3	16.50	11.00	CXXX-7200610	4.5	37.6	15
400V							
01A8-4	99	0.56	0.37	CXXX-2400013	270	2.2	0.37
02A6-4	99	0.83	0.55	CXXX-2400018	270	2.2	0.55
03A3-4	99	1.13	0.75	CXXX-2400023	270	2.2	0.75
04A0-4	99	1.65	1.10	CXXX-2400032	270	2.2	1.1
05A6-4	99	2.25	1.50	CXXX-2400041	270	2.2	1.5
07A2-4	53	3.30	2.20	CXXX-3400056	100	6.0	2.2
09A4-4	53	4.50	3.00	CXXX-3400073	100	6.0	3
12A6-4	32	6.00	4.00	CXXX-3400094	100	6.0	4
17A0-4	32	8.25	5.50	CXXX-4400135	50	11.2	5.5
25A0-4	23	11.25	7.50	CXXX-4400170	50	11.2	7.5
032A-4	6	17.00	11.00	CXXX-5400270	38	17.8	16.2
				CXXX-5400300	22	30.8	19.6
038A-4	6	23.00	15.00	CXXX-6400350	20	33.8	21.6
045A-4	6	28.00	18.50	CXXX-6400420	20	33.8	25
050A-4	6	33.00	22.00	CXXX-6400470	20	33.8	32.7

Table 6.2

7.0 Mechanical Installation

Based on the equivalent drives specified in table 2, this section provides details on the dimension differences between the ABB ACS380 and the Commander C200/C300. The dimensions are listed in tables 10 and 11 are based on the dimensions in the diagrams below.



7.1 Overall Dimensions and Weight

Based on the equivalent drives specified in table 2, this section provides details on the mounting dimension differences between the ABB ACS380 and the Commander C200/C300.



									
Frame	Height	Width	Depth	Weight	Frame	Height	Width	Depth	Weight
R0	223mm (8.78in)	70mm (2.76in)	191mm (7.52in)	1.4kg (3.1lb)	1	160mm (6.3in)	75mm (2.95in)	130mm (5.1in)	0.75kg (1.85lb)
R1	223mm (8.78in)	70mm (2.76in)	191mm (7.52in)	1.6kg (3.5lb)	2	205mm (8.07in)	75mm (2.95in)	150mm (5.9in)	1.3kg (3.00lb)
					3	226mm (8.9in)	90mm (3.54in)	160mm (6.3in)	1.5kg (3.30lb)
R2	223mm (8.78in)	95mm (3.74in)	191mm (7.52in)	1.9kg (4.2lb)	4	277mm (10.9in)	115mm (4.53in)	175mm (6.89in)	3.13kg (6.90lb)
R3	223mm (8.78in)	169mm (6.65in)	191mm (7.52in)	2.9kg (6.4lb)	5	365mm (14.37in)	143mm (5.63in)	200mm (7.87in)	7.4kg (16.30lb)
R4	240mm (9.45in)	260mm (10.24in)	191mm (7.52in)	5.8kg (12.8lb)	6	365mm (14.37in)	210mm (8.27in)	227mm (8.94in)	14kg (30.90lb)
					7	508mm (20.0in)	270mm (10.63in)	280mm (11.02in)	28kg (61.70lb)

Table 7.0

In many cases, the same frame sizes do not correspond to equal power rating ranges, refer to table 2 for the cross reference between power ratings and frame size.

7.2 Mounting Dimensions

Based on the equivalent drives specified in table 2, this section provides details on the mounting dimension differences between the ABB ACS380 and the Commander C200/C300.



							
Frame	Height	Width	Mounting Holes	Frame	Height	Width	Mounting Holes
R0	191mm (7.52in)	50mm (1.97in)	4 × Ø5mm (4 × Ø0.2in)	1	143mm (5.70in)	53mm (2.08in)	4 × Ø5mm (4 × Ø0.2in)
R1	191mm (7.52in)	50mm (1.97in)	4 × Ø5mm (4 × Ø0.2in)	2	194mm (7.63in)	55mm (2.17in)	4 × Ø5mm (4 × Ø0.2in)
				3	215mm (8.46in)	70.7mm (2.80in)	4 × Ø5mm (4 × Ø0.2in)
R2	191mm (7.52in)	75mm (2.95in)	4 × Ø5mm (4 × Ø0.2in)	4	265mm (10.43in)	86mm (3.40in)	4 × Ø6mm (4 × Ø0.23in)
R3	191mm (7.52in)	148mm (5.83in)	4 × Ø5mm (4 × Ø0.2in)	5	375mm (14.76in)	106mm (4.17in)	4 × Ø6.5mm (4 × Ø0.26in)
R4	191mm (7.52in)	238mm (9.37in)	4 × Ø5mm (4 × Ø0.2in)	6	378mm (14.88in)	196mm (7.72in)	4 × Ø7mm (4 × Ø0.27in)
				7	538mm (21.18in)	220mm (8.66in)	4 × Ø9mm (4 × Ø0.27in)

Table 7.1

In many cases, the same frame sizes do not correspond to equal power rating ranges, refer to table 2 for the cross reference between power ratings and frame size.

8.0 Electrical Installation

8.1 Power Specifications

The table below provides a cross-reference of power specifications between the ABB ACS380 and the Commander C200/C300.



Specification		
Input Voltage Range	200V to 240V (+10%/-15%) 380V to 480V (+10%/-15%)	100V to 120V (±10%) 200V to 240V (±10%) 380V to 480V (±10%) 500 V to 575 V (±10 %) 500 V to 690 V (±10 %)
Input Frequency Range	47 to 63Hz	44 to 66Hz
Output Overload Rating	Light Duty: 110% for 60s/10min Heavy Duty: 150% for 60s/10min	150% for 60s, 180% for 3s (RFC-A)
Output Frequency Range	0 to 599Hz	0 to 599Hz
Output Switching Frequency Range	1.5, 2, 4, 8 or 12kHz (1kHz available on larger frame sizes)	0.667kHz to 16kHz* ¹
Headline Rating Switching Frequency	4kHz	3kHz

Table 8.0

*¹ 0.667kHz and 1kHz switching frequencies available on frame size 1 to 4 only.

8.2 Power Connections

The table below provides a cross-reference of power terminals between the ABB ACS380 and the Commander C200/C300. Refer to the product user guide for fusing and cable information.



		
Function	Terminal No.	Terminal No.
Supply L1	L1	L1
Supply L2	L2	L2* ¹
Supply L3	L3	L3
Motor U phase	T1/U1	U
Motor V Phase	T2/V1	V
Motor W Phase	T3/W1	W
+ DC Bus	R+/UDC+	+
-DC Bus	UDC-	-
Braking	R+/UDC+	+
	R-	BR
Earth	≡/PE	≡

Table 8.1

*¹ If supplied from single-phase use terminals L1 (Live) & L3 (Neutral)

8.3 Control Connections

The table below provides a cross-reference of control connections between the ABB ACS380 and the Commander C200/C300. Direction connection replacements are indicated via an arrow. For more information on the STO and other terminals refer to the individual drive's installation manual.



Default Function		
	Terminal No.	Terminal No.
0V Common	DGND	1
Analogue Input 1	AI1	2
+10V User Output	+10V	4
Analogue Input 2	AI2	5
Analog Input/Output Common	3 x AGND	1
Analogue Output 1	AO	7
Analogue Signal Cable Screen	SCR	Use grounding bracket provided
+24V User Output	+24V	9
Digital Input Common	DCOM	Not supported
Digital Input 1	DI1	11
Digital Input 2	DI2	12
Digital Input 3	DI3	13
Digital Input 4	DI4	14
Digital Input/Output 1	DIO1	10
Digital Input/Output 2	DIO2	2 (SI-I/O Option Module)
Relay 1 Common	RC	41 / Powerdrive F300
Relay 1 Normally Open Contact	RA	42 / Powerdrive F300
Relay 1 Normally Closed	RB	Powerdrive F300
STO +24V	S+	Not Required
STO	S1, S2	31, 34 (31, 35) * ¹
STO 0V Common	SGND	32, 33 (32, 36) * ¹

Table 8.2

*¹ Commander C300 only. STO connections change from frame 5. Frame 5+ terminals in brackets

9.0 Parameter Compare

9.1 Motor Data Parameter Comparison

The table below provides a cross reference between key parameters required for motor setup in the ABB ACS380 and Commander C200/C300. If a parameter in the ABB ACS380 does not have an equivalent parameter in the Commander C200/C300 details will be provided how similar functionality can be achieved.



								
Parameter Function	Parameter Location		Parameter Name	Units / Options	Parameter Location		Parameter Name	Units / Options
	Menu	Parameter			Menu	Parameter		
Motor Rated Power	99	10	Motor Nominal Power	0.01kW or 0.01hp* ¹	No Equivalent Parameter			
Motor Rated Voltage	99	07	Motor Nominal Voltage	0.1V	00	008	Motor Rated Voltage	1V
Motor Rated Current	99	06	Motor Nominal Current	0.1A	00	006	Motor Rated Current	0.01A
Motor Rated Frequency	99	08	Motor Nominal Frequency	0.01Hz	05	006	Motor Rated Frequency	0.01Hz
Motor Rated Speed	99	09	Motor Nominal Speed	1rpm	00	007	Motor Rated Speed	0.1rpm
Motor Rated Power Factor	99	11	Motor Nominal cosφ	0.01	00	009	Motor Rated Power Factor	0.01

Table 9.0

*¹ Units can be changed in the drive using parameter 96.16 Unit Selection.

9.2 Application Parameter Comparison

The table below provides a cross reference between key parameters required for application setup in the ABB ACS380 and Commander C200/C300. If a parameter in the ABB ACS380 does not have an equivalent parameter in the Commander C200/C300 details will be provided on how similar functionality can be achieved.



Parameter Function								
	Parameter Location		Parameter Name	Units	Parameter Location		Parameter Name	Units
	Menu	Parameter			Menu	Parameter		
Minimum Frequency	30	13	Minimum Frequency	0.01Hz	0	01	Minimum Frequency	0.01Hz
Maximum Frequency	30	14	Maximum Frequency	0.01Hz	0	02	Maximum Frequency	0.01Hz
Acceleration Rate	23	12	Acceleration Time 1	0.001s	0	03	Acceleration Rate 1	0.1s
Deceleration Rate	23	13	Deceleration Time 1	0.001s	0	04	Deceleration Rate 1	0.1s
Quick Setup	96	04	Macro Select	Standard, Alternate, Motor Potentiometer, PID	0	05	Drive Configuration	N/A
Reference Selector	22	11	Ext1 Speed Ref1	<i>See firmware manual</i>	01	014	Reference Selector	N/A
Preset Speed 1	22	26	Constant speed 1	0.01rpm	0	18	Preset Speed 1	0.01Hz
Preset Speed 2	22	27	Constant speed 2	0.01rpm	0	19	Preset Speed 2	0.01Hz
Preset Speed 3	22	28	Constant speed 3	0.01rpm	0	20	Preset Speed 3	0.01Hz
Preset Speed 4	22	29	Constant speed 4	0.01rpm	0	21	Preset Speed 4	0.01Hz
Preset Speed 5	22	30	Constant speed 5	0.01rpm	01	025	Preset Speed 5	0.01Hz
Preset Speed 6	22	31	Constant speed 6	0.01rpm	01	026	Preset Speed 6	0.01Hz
Preset Speed 7	22	32	Constant speed 7	0.01rpm	01	027	Preset Speed 7	0.01Hz

Table 9.1



Commander C200/C300 Competitor Migration Guide.

*Rockwell Automation/
Allen-Bradley PowerFlex
525 to Commander
C200/C300*



1.0 Functionality Cross-Reference

The table below provides a cross reference of functionality between the Rockwell Automation/Allen-Bradley PowerFlex 525 Drive and the Commander C200/300.

Functionality		
Communications		
MODBUS	✓	Option - KI485 Adapter
EtherNet/IP (on Board)	✓	Option - SI Ethernet
DeviceNet™	Optional	Option - SI DeviceNet
PROFIBUS DP	Optional	Option - SI PROFIBUS DP
Dual EtherNet/IP	Optional	✗
Reference		
Jog	✓	✓
Bi-polar reference	✓	✓
Preset speeds	8	8
Preset timer	✓	✓
Skip frequencies	4	3
Skip frequencies dead band	✓	✓
Local/Remote (Keypad)	✓	✓
S-Ramp	✓	✓
Acceleration Rates	11	8
Deceleration Rates	11	8
Pulse Train Frequency Reference	0 to 100kHz	0 to 100kHz
Run Reverse	✓	✓
Torque reference	✗	✓
Control		
PM Control	✓	Digitax HD
Control Mode: Linear V/f	✓	✓
Control Mode: Quadratic V/f	✓	✓
Control Mode: Dynamic V/f	✓	✓
Control Mode: Set Point V/f	✓	✓
Stator Resistance Compensation	✓	✓
Slip Compensation	✓	✓
Auto-tune: Static	✓	✓
Auto-tune: Rotating	✓	✓
PWM Switching Frequency	2 to 16kHz	0.677 to 16kHz* ¹
Flying Start /Catch a spinning motor	✓	✓
Stop mode: Ramp	✓	✓
Stop mode: Coast	✓	✓
Stop mode: Fast Ramp	✓	✓
DC Injection Braking	✓	✓
Brake settings (DC bus)	✓	✓
Cooling fan control	✗	✓
Motor pre-heat control	✗	✓
Supply loss detection	✓	✓
50% DC link operation	✓	✓

(Continued)

*¹ 0.677 and 1kHz available on Frames 1 to 4 only.

1.0 Functionality Cross-Reference (continued)

Functionality		
I/O Functions		
Analogue input control	✓	✓
Analogue output control	✓	✓
Temperature monitoring	✓	✓
Digital input control	✓	✓
Digital output control	✓	✓
Relay control	✓	✓
Mechanical brake controller	✓	✓
Motorised pot	✓	✓
Logic function control	✓	✓
Timer function control	✓	✓
Limit switch control	✓	✓
PID control	✓	✓
General		
Displayable Parameters		All
Energy meter	✓	✓
Trip time stamping	✓	✓
Previous trip data parameters	10	8
Run time log	✓	✓
Diagnostics	✓	✓
Auto-reset after trip	✓	✓
Power loss ride through	✓	✓
Control word control	✓	✓
Cloning	✓	✓
Security	Limited	✓
Speed Feedback	Encoder Option Quadrature Only	Option – SI Encoder* ¹
I/O		
+10V user output	✓	✓
+24V user output	✓	✓
Stop	✓	✓ Via Enable
Safe Torque Off	SIL 2	SIL 3* ²
Digital Inputs	7	5
Digital Outputs	2	1
Analogue Inputs	2	2
Analogue Outputs	1	1
Relay	2	1

Table 1

*¹SI-Encoder can be used with frame size 2 drives and above.

*²SIL3 achievable on C300 only, using the dual STO inputs.



2.0 Model Number Cross-Reference Based on Headline Nominal Power Ratings

Cat No explanation below for Rockwell PowerFlex 525

Example 25B-B2P5N104

25B	-	B	2P5	N	1	0	4
Drive Type		Voltage Rating	Output Current	Enclosure	Interface Module	Emission Class	Braking
25A=PowerFlex 523 25B=PowerFlex 525	Dash	V=120VAC Single phase A=240VAC Single phase B=240VAC 3 Phase D=480VAC 3 Phase E= 600VAC 3 Phase	2.5A	IP20 Nema/Open	Standard	Filter	Standard

The table below provides a cross-reference between the Rockwell Automation/Allen-Bradley PowerFlex 525 Drive and the Commander C200/C300 equivalents based on the nominal power rating. Refer to [Drive Ratings](#) for a more detailed cross reference including continuous output current.

					
Model Number	kW	Frame Size	Model Number	kW	Frame Size
100V Single Phase					
25A-V1P6N104* ¹	0.2	A	CXXX-01100017	0.25	1
25B-V2P5N104	0.4	A	CXXX-01100024	0.37	1
25B-V4P8N104	0.75	B	CXXX-02100042	0.75	2
25B-V6P0N104	1.1	B	CXXX-02100056	1.1	2
200V Single Phase					
25B-A2P5N104	0.4	A	CXXX-01200024	0.37	1
			CXXX-01200033	0.55	1
25B-A4P8N104	0.75	A	CXXX-01200042	0.75	1
25B-A8P0N104	1.5	B	CXXX-02200075	1.5	2
25B-A011N104	2.2	B	CXXX-03200100	2.2	3
200V 3 phase					
25B-B2P5N104	0.4	A	CXXX-02200024* ²	0.37	1
			CXXX-02200033* ²	0.55	1
25B-B5P0N104	0.75	A	CXXX-02200042* ²	0.75	1
			CXXX-02200056	1.1	2
25B-B8P0N104	1.5	A	CXXX-02200075	1.5	2
			CXXX-03200100	2.2	3
25B-B011N104	3	A	CXXX-04200133	3	4
25B-B017N104	4	B	CXXX-04200176	4	4
25B-B024N104	5.5	C	CXXX-05200250	5.5	5
25B-B032N104	7.5	D	CXXX-06200330	7.5	6
25B-B048N104	11	E	CXXX-06200440	11	6
			CXXX-07200610	15	7
25B-B062N104	15	E	CXXX-07200750	18.5	7

(Continued)

*¹ PowerFlex 523 Option Drive

*² Frame 2 drives with equal power rating to be used if an SI option module is required.

2.0 Model Number Cross-Reference Based on Headline Nominal Power Ratings (continued)



					
Model Number	kW	Frame Size	Model Number	kW	Frame Size
400V					
25B-D1P4N104	0.4	A	CXXX-2400013	0.37	2
			CXXX-2400018	0.55	2
25B-D2P3N104	0.75	A	CXXX-2400023	0.75	2
25B-D4P0N104	1.5	A	CXXX-2400041	1.5	2
25B-D6P0N104	2.2	A	CXXX-3400056	2.2	3
			CXXX-3400073	3	3
25B-D010N104	4	B	CXXX-3400094	4	3
25B-D013N104	5.5	C	CXXX-4400135	5.5	4
25B-D017N104	7.5	C	CXXX-4400170	7.5	4
25B-D024N104	11	D	CXXX-5400270	11	5
25B-D030N104	15	D	CXXX-5400300	15	5
			CXXX-6400350	15	6
575V					
25B-E1P7N104	0.75	A	CXXX-5500030	1.5	5
25B-E3P0N104	1.5	A			
25B-E4P2N104	2.2	A	CXXX-5500040	2.2	5
25B-E6P6N104	4	B	CXXX-5500069	4	5
25B-E9P9N104	5.5	C	CXXX-6500100	5.5	6
25B-E012N104	7.5	C	CXXX-6500150	7.5	6
25B-E019N104	11	D	CXXX-6500190	11	6
25B-E022N104	15	D	CXXX-6500230	15	6
25B-E027N104	18.5	E	CXXX-6500290	18.5	6
25B-E032N104	22	E	CXXX-6500350	22	6

Table 2

3.0 Environmental Conditions

The table below provides a summary on the environmental conditions of the Rockwell Automation/Allen-Bradley PowerFlex 525 and the Commander C200/C300.



Specification						
Storage temperature	-40 to 85°C for Frame size A-D -40 to 70°C for Frame size E	-40°C to 60°C				
Operating temperature without de-rate	-20 to 50°C Dependant on Mounting Criteria and spacing's. Consult Rockwell Automation Literature	-20°C to 40°C				
Operating conditions with de-rate	-20 to 60°C. Dependant on Mounting Criteria	40°C to 60°C				
Humidity	95% Non-condensing	95% Non-condensing				
Altitude	1000m – No de-rate De-rate the maximum ambient temperature by 5 °C (9 °F) for every additional 1000 m Or De-rate the output current by 10% for every additional 1000 m	1000m – No de-rate 1000m to 3000m - 1% de-rate/100m				
IP Rating	IP20 Nema/Open Dictated by N in cat no. 25B-B048N104	IP20 – Pollution degree 2				
Vibration	Operating and Non-operating				Transportation	Testing in each of three mutually perpendicular axes in turn. Referenced standard: IEC 60068-2-6: Test Fc: Frequency range: 5 to 500 Hz Severity: 3.5 mm peak displacement from 5 to 9 Hz 10 m/s ² peak acceleration from 9 to 200 Hz 15 m/s ² peak acceleration from 200 to 500 Hz
	Frame	Shock/Vibration	Mount Type	Shock/Vibration	Mount Type	
	A	15g/2g	Din rail/Screw	30g/2.5g	Screw only	
	B	15g/2g	Din rail/Screw	30g/2.5g	Screw only	
	C	15g/2g	Din rail/Screw	30g/2.5g	Screw only	
	D	15g/2g	Screw only	30g/2.5g	Screw only	
E	15g/1.5g	Screw only	30g/2.5g	Screw only		
Harsh Environments	IEC 60721-3-3 to level 3C2 (chemical and gases only)				IEC60721-3-3 3C3 EN60068-2-60	

Table 3

4.0 Electromagnetic Compatibility (EMC)

The table below provides a summary on the EMC standards supported by the Rockwell Automation/Allen-Bradley PowerFlex 525 and the Commander C200/C300.



Immunity Compliance		
IEC 61000-4-2 Electrostatic Discharge	2014/30/EU EMC Directive (EMC)	Supported
IEC 61000-4-3 Radio frequency radiated field	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-4-4 Fast Transient Burst	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-4-5 Surges	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-4-6 Conducted Radio Frequency	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-4-11 Voltage Dips and Interruptions	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-6-1 Generic immunity standard for the residential, commercial and light industrial environments	Indirectly via 2014/30/EU EMC Directive (EMC)	Supported
IEC61000-6-2 Generic immunity standard for the industrial environment	Indirectly via 2014/30/EU EMC Directive (EMC)	Supported
IEC 61800-3 Immunity Requirements for adjustable speed power drive systems	Supported	Supported

Table 4

5.0 Approvals

The table below provides a summary on the approvals the Rockwell Automation/Allen-Bradley PowerFlex 525 and the Commander C200/C300 adhere too.



Approvals		
CSA	Supported	Supported
UL	Supported	Supported
RCM	Supported	Supported
EAC	Supported	Supported
CE	Supported	Supported
KCC	Supported	Currently under approval
TUV	Supported	Supported
ATEX TUV 12 ATEX 7199 X	Supported	No
AC156	Supported	No
SEMI F47	Supported	Comply but do not have certification from an outside agency
Lloyds Register 12/10068(E1)	Supported	No once DNV is supported DNV will support marine applications
RoHS 2011/65/EU Directive	Supported	Supported

Table 5

6.0 Drive Ratings

The drive rating tables featured below conform to the terminology used in the Rockwell Automation/Allen-Bradley PowerFlex 525 Drive Installation Manual. The nominal output current listed in the tables would be equivalent to the maximum continuous output current list in the Control techniques documentation. For the peak currents that can be achieved using the overload of the drive refer to the Peak currents.

6.1 100V Ratings Based on Model Number Cross-Reference



										
Model No.	kW	HP	Nominal Output Current A	Max. Overload Current A 180% for 3s A	Model No.	kW @ 230V	HP @ 230V	Maximum Continuous Output Current A	Open Loop Peak Current A	RFC Peak Current A
25A-V1P6N104* ¹	0.2	0.25	1.6	2.88	CXXX-01100017	0.25	0.33	1.7	2.6	3.1
25B-V2P5N104	0.4	0.5	2.5	4.5	CXXX-01100024	0.37	0.5	2.4	3.6	4.3
25B-V4P8N104	0.75	1.0	4.8	8.64	CXXX-02100042	0.75	1	4.2	6.3	7.6
25B-V6P0N104	1.1	1.5	6.0	10.8	CXXX-02100056	1.1	1.5	5.6	8.4	10.1

Table 6

*¹ PowerFlex 523 Option Drive

6.2 200V Single Phase Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the **200V Single phase Drives** ratings between the Rockwell Automation/Allen-Bradley PowerFlex 525 drive and the Commander C200/C300.



											
Model No.	kW	HP	Nominal Output Current A	Max. Overload Current A 180% for 3s A	Model No.	kW @ 230V	HP @ 230V	Maximum Continuous Output Current A	Open Loop Peak Current A	RFC Peak Current A	Phase supply
25A-A1P6N104 * ¹	0.2	0.25	1.6	2.88	01200017	0.25	0.33	1.7	2.6	3.1	1
25B-A2P5N104	0.4	0.5	2.5	4.5	01200024	0.37	0.5	2.4	3.6	4.3	1
					01200033	0.55	0.75	3.3	5.0	5.9	1
25B-A4P8N104	0.75	1	4.8	8.64	01200042	0.75	1.0	4.2	6.3	7.6	1
					02200056	1.1	1.0	5.6	8.4	10.1	1/3
25B-A8P0N104	1.5	2	8.0	14.4	02200075	1.5	2.0	7.5	11.3	13.5	1/3
					03200100	2.2	3.0	10.0	15.0	18.0	1/3
25B-A011N104	2.2	3	11	19.8	04200133	3.0	3.0	13.3	20.0	23.9	1/3

Table 7

*¹ PowerFlex 523 Option Drive

6.3 200V Three Phase Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the 200V three phase supplied Drives rating between the Rockwell Automation/Allen-Bradley PowerFlex 525 drive and the Commander C200/C300.



											
Model No.	kW	HP	Nominal Output Current A	Max. Overload Current 180% for 3s A	Model No.	kW @ 230V	HP @ 230V	Maximum Continuous Output Current A	Open Loop Peak Current A	RFC Peak Current A	Phase supply
25B-B2P5N104	0.4	0.5	2.5	4.5	02200024 02200033	0.37 0.55	0.5 0.75	2.4 3.3	3.6 5	4.3 5.9	1/3 1/3
25B-B5P0N104	0.75	1	5.0	9	02200042 02200056	0.75 1.1	1 1.5	4.2 5.6	6.3 8.4	7.6 10.1	1/3 1/3
25B-B8P0N104	1.5	2	8.0	14.4	02200075 03200100	1.5 2.2	2 3	7.5 10.0	11.3 15	13.5 18	1/3 1/3
25B-B011N104	2.2	3	11	19.8	04200133	3	3	13.3	20	23.9	1/3
25B-B017N104	4	5	17	30.6	04200176	4.0	5.0	17.6	26.4	31.7	3
25B-B024N104	5.5	7.5	24	43.2	05200250	5.5	7.5	25.0	37.5	50.0	3
25B-B032N104	7.5	10	32	57.6	06200330	7.5	10	33.0	49.5	66.0	3
25B-B048N104	11	15	48	86.4	06200440	11	15	44.0	66.0	88.0	3
25B-B062N104	15	20	62	111.6	07200610 07200750	15 18.5	20 25	61 75	91.5 112.5	122 150	3 3

Table 8

Rockwell Automation/Allen-Bradley PowerFlex 525 Drive values at 4kHz

Commander CXXX values based on 3kHz

6.4 400V Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the **400V drive ratings** between the Rockwell Automation/Allen-Bradley PowerFlex 525 Drive and the Commander C200/C300 drives.



										
Model No.	kW	HP	Nominal Output Current A	Max. Overload Current 180% for 3s A	Model No.	kW @ 400V	HP @ 460V	Maximum Continuous Output Current A	Open Loop Peak Current A	RFC Peak Current A
25B-D1P4N104	0.4	0.5	1.4	2.52	02400013 02400018	0.37 0.55	0.5 0.75	1.3 1.8	2.0 2.7	2.3 3.2
25B-D2P3N104	0.75	1	2.3	4.14	02400023	0.75	1.0	2.3	3.5	4.1
25B-D4P0N104	1.5	2	4.0	7.2	02400032 02400041	1.1 1.5	1.5 2.0	3.2 4.1	4.8 6.2	5.8 7.4
25B-D6P0N104	2.2	3	6.0	10.8	03400056 03400073	2.2 3.0	3.0 3.0	5.6 7.3	8.4 11.0	10.1 13.1
25B-D010N104	4.0	5	10.5	18.9	03400094 04400135	4.0 5.5	5.0 7.5	8.4 13.5	14.1 20.3	16.9 24.3
25B-D013N104	5.5	7.5	13	23.4	04400135	5.5	7.5	13.5	20.3	24.3
25B-D017N104	7.5	10	17	30.6	04400170	7.5	10.0	17	25.5	30.6
25B-D024N104	11	15	24	43.2	05400270	11.0	20.0	27.0	40.5	54.0
25B-D030N104	15	20	30	54	05400300	15.0	20.0	30.0	45.0	60.0

Table 9

Rockwell Automation/Allen-Bradley PowerFlex 525 values based on 4kHz

Commander CXXX values based on 3kHz

6.5 575V Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the 575V drive ratings between the Rockwell Automation/Allen-Bradley PowerFlex 525 Drive and the Commander C200/C300 drives.



										
Model No.	kW	HP	Nominal Output Current A	Max. Overload Current A 180% for 3s A	Model No.	kW @ 575V	HP @ 575V	Maximum Continuous Output Current A	Open Loop Peak Current A	RFC Peak Current A
25B-E1P7N104	0.75	1.0	1.7	3.06	05500030	1.5	2.0	3.0	4.5	6.0
25B-E3P0N104	1.5	2	3.0	5.4						
25B-E4P2N104	2.2	3	4.2	7.56	05500040	2.2	3.0	4.0	6.0	8.0
25B-E6P6N104	4	5	6.6	11.88	05500069	4.0	5.0	6.9	10.3	13.8
25B-E9P9N104	5.5	7.5	9.9	17.82	06500100	5.5	7.5	10.0	15.0	20.0
25B-E012N104	7.5	10	12	21.6	06500150	7.5	10.0	15.0	22.5	30.0
25B-E019N104	11	15	19	34.2	06500190	11.0	15.0	19.0	28.5	38.0
25B-E022N104	15	20	22	39.6	06500230	15.0	20.0	23.0	34.5	46.0
25B-E027N104	18.5	25	27	48.6	06500290	18.5	25	29	43.5	58
25B-E032N104	22	30	32	57.6	06500350	22	30	35	52.5	70



Table 10

Rockwell Automation/Allen-Bradley PowerFlex 525 values based on 4kHz

Commander CXXX values based on 3kHz

6.6 Braking Resistor Ratings

Based on the equivalent drives specified in table 2, this section provides details on the braking resistor specifications for the Rockwell Automation/Allen-Bradley PowerFlex 525 Drive and the Commander C200/C300.

							
Model Number	Minimum Resistance Ω	Instantaneous Power kW	Continuous Power kW	Model Number	Minimum Resistance Ω	Instantaneous Power kW	Continuous Resistor Power Rating kW
200V Single Phase Drives							
25B-A2P5N104	56	No Data	No Data	CXXX-_200024	130 / 68* ¹	1.1 / 2.2* ¹	0.37
				CXXX-_200033	130 / 68* ¹	1.1 / 2.2* ¹	0.55
25B-A4P8N104	56	No Data	No Data	CXXX-_200042	130 / 68* ¹	1.1 / 2.2* ¹	0.75
				CXXX-2200056	68	2.2	1.1
25B-A8P0N104	41	No Data	No Data	CXXX-2200075	68	2.2	1.5
				CXXX-3200100	45	3.3	2.2
25B-A011N104	32	No Data	No Data	CXXX-4200133	22	6.0	3
200V Three Phase Drives							
25B-B017N104	18	No Data	No Data	CXXX-4200176	22	6.0	4
25B-B024N104	16	No Data	No Data	CXXX-5200250	19	8.9	8.6
25B-B032N104	14	No Data	No Data	CXXX-6200330	10	16.9	12.6
25B-B048N104	14	No Data	No Data	CXXX-6200440	10	16.9	16.4
25B-B062N104	10	No Data	No Data	CXXX-7200610	4.5	37.6	15
				CXXX-7200750	4.5	37.6	18.5
400V							
25B-D1P4N104	89	No Data	No Data	CXXX-2400013	270	2.2	0.37
				CXXX-2400018	270	2.2	0.55
25B-D2P3N104	89	No Data	No Data	CXXX-2400023	270	2.2	0.75
				CXXX-2400032	270	2.2	1.1
25B-D4P0N104	89	No Data	No Data	CXXX-2400041	270	2.2	1.5
25B-D6P0N104	89	No Data	No Data	CXXX-3400056	100	6.0	2.2
				CXXX-3400073	100	6.0	3
25B-D010N104	47	No Data	No Data	CXXX-3400094	100	6.0	4
25B-D013N104	47	No Data	No Data	CXXX-4400135	50	11.2	5.5
25B-D017N104	47	No Data	No Data	CXXX-4400170	50	11.2	7.5
25B-D024N104	43	No Data	No Data	CXXX-5400270	38	17.8	11
25B-D030N104	43	No Data	No Data	CXXX-5400300	22	30.8	15
				CXXX-6400350	20	33.8	15

(Continued)

*1 (Size 1 Ratings) / (Size 2 Ratings)

6.7 Braking Resistors Ratings (continued)



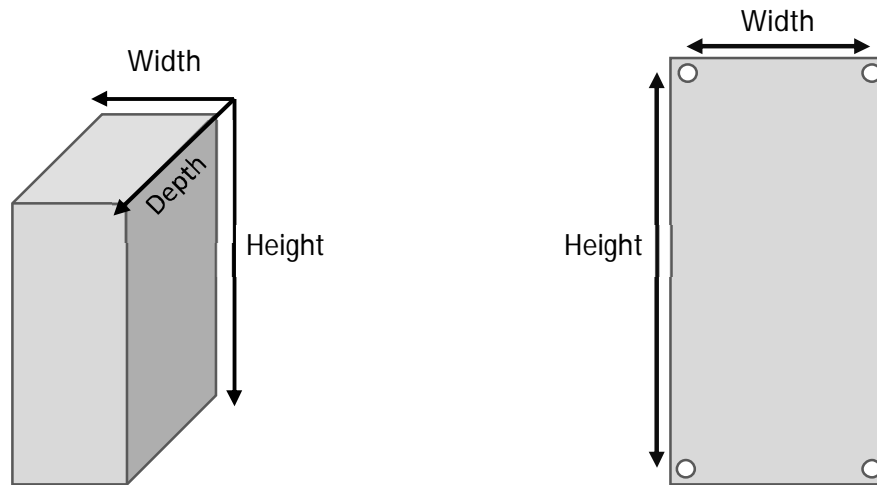
							
Model Number	Minimum Resistance Ω	Instantaneous power kW	Continuous power kW	Model Number	Minimum Resistance Ω	Instantaneous power kW	Continuous Resistor power rating kW
575V							
25B-E1P7N104	112	No Data	No Data	CXXX-5500030	80	12.1	2.6
25B-E3P0N104	112	No Data	No Data				
25B-E4P2N104	112	No Data	No Data	CXXX-5500040	80	12.1	4.6
25B-E6P6N104	86	No Data	No Data	CXXX-5500069	80	12.1	6.5
25B-E9P9N104	59	No Data	No Data	CXXX-6500100	15	64.1	8.7
25B-E012N104	59	No Data	No Data	CXXX-6500150	15	64.1	12.3
25B-E019N104	59	No Data	No Data	CXXX-6500190	15	64.1	16.3
25B-E022N104	59	No Data	No Data	CXXX-6500230	15	64.1	19.9
25B-E027N104	53	No Data	No Data	CXXX-6500290	15	64.1	24.2
25B-E032N104	34	No Data	No Data	CXXX-6500350	15	64.1	31.7

Table 11

7.0 Mechanical Installation

Based on the equivalent drives specified in table 2, this section provides details on the dimension differences between the Rockwell Automation/Allen-Bradley PowerFlex 525 Drive and the Commander C200/C300. The dimensions are listed in tables 12 and 13 are based on the dimensions in the diagrams below.



7.1 Overall Dimensions and Weight

Based on the equivalent drives specified in table 2, this section provides details on the mounting dimension differences between the Rockwell Automation/Allen-Bradley PowerFlex 525 Drive and the Commander C200/C300. The Rockwell Automation/Allen-Bradley PowerFlex 525 Drive has multiple depths and weights per frame size (A to E) based on the power rating. For simplicity, frame sizes have been condensed to those with unique mounting dimensions and the maximum depth and weights for that frame size have been listed.

									
Frame	Height	Width	Depth	Weight	Frame	Height	Width	Depth	Weight
A	152mm (5.98in)	72mm (2.83in)	172mm (6.77in)	1.1kg (2.4lb)	1	160mm (6.3in)	75mm (2.95in)	130mm (5.1in)	0.75kg (1.85lb)
B	180mm (7.09in)	87mm (3.43in)	172mm (6.77in)	1.6kg (3.5lb)	2	205mm (8.07in)	75mm (2.95in)	150mm (5.9in)	1.3kg (3.00lb)
C	220mm (8.66in)	109mm (4.29in)	184mm (7.24in)	2.3kg (5.0lb)	3	226mm (8.9in)	90mm (3.54in)	160mm (6.3in)	1.5kg (3.30lb)
D	260mm (10.24in)	130mm (5.12in)	212mm (8.35in)	3.9kg (8.6lb)	4	277mm (10.9in)	115mm (4.53in)	175mm (6.89in)	3.13kg (6.90lb)
E	300mm (11.81in)	185mm (7.28in)	279mm (10.98in)	12.9kg (28.4lb)	5	365mm (14.37in)	143mm (5.63in)	200mm (7.87in)	7.4kg (16.30lb)
					6	365mm (14.37in)	210mm (8.27in)	227mm (8.94in)	14kg (30.90lb)
					7	508mm (20.0in)	270mm (10.63in)	280mm (11.02in)	28kg (61.70lb)

Table 12

7.2 Mounting Hole Dimensions

Based on the equivalent drives specified in table 2, this section provides details on the mounting hole dimension differences between the Rockwell Automation/Allen-Bradley PowerFlex 525 Drive and the Commander C200/C300.

							
Frame	Height	Width	Mounting Holes	Frame	Height	Width	Mounting Holes
A	140mm (5.51in)	57.5mm (2.26in)	4 × Ø5mm (4 × Ø0.2in)	1	143mm (5.70in)	53mm (2.08in)	4 × Ø5mm (4 × Ø0.2in)
B	168mm (6.61in)	72.5mm (2.85in)	4 × Ø5mm (4 × Ø0.2in)	2	194mm (7.63in)	55mm (2.17in)	4 × Ø5mm (4 × Ø0.2in)
C	207mm (8.15in)	90.5mm (3.56in)	4 × Ø5mm (4 × Ø0.2in)	3	215mm (8.46in)	70.7mm (2.80in)	4 × Ø5mm (4 × Ø0.2in)
D	247mm (9.72in)	116mm (4.57in)	4 × Ø5mm (4 × Ø0.2in)	4	265mm (10.43in)	86mm (3.40in)	4 × Ø6mm (4 × Ø0.23in)
E	280mm (11.02in)	160mm (6.3in)	4 × Ø8mm (4 × Ø0.32in)	5	375mm (14.76in)	106mm (4.17in)	4 × Ø6.5mm (4 × Ø0.26in)
				6	378mm (14.88in)	196mm (7.72in)	4 × Ø7mm (4 × Ø0.27in)
				7	538mm (21.18in)	220mm (8.66in)	4 × Ø9mm (4 × Ø0.27in)

Table 13

7.3 Frame Size/Voltage Alignment



			
100V Single Phase			
A			1
B			2
200V Single Phase			
A			1
B			2/3
200V 3 Phase			
A			1/2/3/4
B			4
C			5
D			6
400V			
A			2/3
B			3
C			4
D			5/6
575V			
A			5
B			5
C			6
D			6
E			6

Table 14

7.4 Mounting Clearance



		
Temperature is Dependant on mounting criteria		
Above	50mm	100mm (50mm where ambient temp is 35°C or less, or the average Output Current is de-rated by 20%)
Sides	0mm =45°C otherwise 25mm=50°C	0
Below	50mm	100mm (50mm where ambient temp is 35°C or less, or the average Output Current is de-rated by 20%)

Table 15

8.0 Electrical Installation

8.1 Power Specifications

The table below provides a cross-reference of power specifications between the Rockwell Automation/Allen-Bradley PowerFlex 525 Drive and the Commander C200/C300.



Specification		
Input Voltage Range	100V to 120V (85V-132V) (-15% to +10%) 200V to 240V (170V-264V) (-15% to +10%) 380V to 480V (323V-528V) (-15% to +10%) 525V to 600V (446V-660V) (-15% to +10%)	100V to 120V (±10%) 200V to 240V (±10%) 380V to 480V (±10%) 500V to 575V (±10 %) 500V to 690V (±10 %)
Input Frequency Range	47 to 63Hz	44 to 66Hz
Output Overload Rating	Normal Duty 110% for up to 60 s 150% up to 3 seconds Heavy Duty 150% for up to 60 s, 180% for up to 3 seconds	150% for 60s, 180% for 3 s (RFC-A)
Output Frequency Range	0 to 500Hz	0 to 599Hz
Output Switching Frequency Range	2 to 16kHz	0.667kHz to 16kHz*
Headline Rating Switching Frequency	4kHz	3kHz

Table 16

* 0.667kHz and 1kHz switching frequencies available on frame size 1 to 4 only.

8.2 Power Connections

The table below provides a cross-reference of power terminals between the Rockwell Automation/Allen-Bradley PowerFlex 525 Drive and the Commander C200/C300. Refer to the product user guide for fusing and cable information.



		
Function	Terminal No.	Terminal No.
Supply L1	R/L1	L1
Supply L2	S/L2	L2* ¹
Supply L3	T/L3	L3
Motor U phase	U/T1	U
Motor V Phase	V/T2	V
Motor W Phase	W/T3	W
+ DC Bus	DC+BR+	+
-DC Bus	DC-	-
Braking	DC+BR+	+
	BR-	BR
Earth	⊥	⊥

Table 17

*¹ If supplied from single-phase use terminals L1 (Live) & L3 (Neutral)

8.3 Control Connections

The table below provides a cross-reference of control connections between the Rockwell Automation/Allen-Bradley PowerFlex 525 Drive and the Commander C200/C300. Direct connection replacements are indicated via an arrow. For more information on the STO and other terminals refer to the individual drive's installation manual.

Default Function		
	Terminal No.	Terminal No.
0V Common	4	1
Analogue Input 1	13	5
+10V User Output	12	4
4-20mA Analogue Input	15	2
Analogue Output 1	16	7
+24V User Output	11	9
Digital Input 1 (Stop)	1	11 (Enable Default)
Digital Input 2	2	10 (I/O) * ¹
Digital Input 3	3	12
Digital Input 4	5	13
Digital Input 5	6	14
Digital Input 6	7	2 (SI-I/O Option Module)
Digital Output (Opto) 1 (Sink)	17	10 (I/O) * ¹
Digital Output (Opto) 2 (Sink)	18	S/I IO Option Module
Relay 1 Common	R2	41 (Drive OK Only)
Relay 1 Normally Open Contact	R1	42 (Drive OK Only)
Relay 2 Common	R5	Pumpdrive F600
Relay 2 Normally Closed	R6	Pumpdrive F600
STO +24V (Same as Terminal 11 above)	S+	9
Safety 1	S1	34 (Frame 1-4) 31 (Frame 5-9)
		33 Link to 1 (Frame 1-4) 32 Link to 1 (Frame 5-9)
		31, 34 (31, 35)
Safety 2	S2	31 (Frame 1-4) 35 (Frame 5-9)
		32 link to 1 (Frame 1-4) 32 Link to 1 (Frame 5-9)

Table 18

*¹ Terminal 10 on the Commander can be configured as a digital input or as a digital output

9.0 Parameter Compare

9.1 Motor Data Parameter Comparison

The table below provides a cross reference between key parameters required for motor setup in the Rockwell Automation/Allen-Bradley PowerFlex 525 and Commander C200/C300.

Parameter Function	Parameter Location		Parameter Name	Units / Options	Parameter Location		Parameter Name	Units / Options
	Menu	Parameter			Menu	Parameter		
	Motor Rated Power	Basic			P037	Motor NP Power		
Motor Rated Voltage	Basic	P031	Motor NP Volts	1V	00	008	Motor Rated Voltage	1V
Motor Rated Current	Basic	P034	Motor NP FLA	0.1A	00	006	Motor Rated Current	0.01A
Motor Rated Frequency	Basic	P032	Motor NP Hertz	1Hz	05	006	Motor Rated Frequency	0.01Hz
Motor Rated Speed	Basic	P036	Motor NP RPM	1rpm	00	007	Motor Rated Speed	0.1rpm
Motor Rated Power Factor	No Equivalent Parameter				00	009	Motor Rated Power Factor	0.01
Torque Performance Mode	Basic	P039	Torque Perf Mode		00	079	User Drive Mode	
Auto Tune	Basic	P040	Autotune		5	012	Auto-tune	

Table 19

9.2 Application Parameter Comparison

The table below provides a cross reference between key parameters required for application setup in the Rockwell Automation/Allen-Bradley PowerFlex 525 and Commander C200/C300.



Parameter Function								
	Parameter Location		Parameter Name	Units	Parameter Location		Parameter Name	Units
	Menu	Parameter			Menu	Parameter		
Minimum Frequency	Basic	P043	Minimum Freq	0.01Hz	0	01	Minimum Frequency	0.01Hz
Maximum Frequency	Basic	P044	Maximum Freq	0.01Hz	0	02	Maximum Frequency	0.01Hz
Acceleration Rate	Basic	P041	Accel Time 1	0.01s	0	03	Acceleration Rate 1	0.1s
Deceleration Rate	Basic	P042	Decel Time 1	0.01s	0	04	Deceleration Rate 1	0.1s
Drive Configuration	No Equivalent Parameter				0	05	Drive Configuration	N/A
Reference Selector	Basic	P047	Speed Reference 1	Menu Options	01	014	Reference Selector	N/A
Stop Mode Configuration	Basic	P045	Stop Mode	Menu Options	0	031	Stop Mode	N/A
Preset Speed 1	Adv Program	A410	Preset Freq 0	0.01s	0	18	Preset Speed 1	0.01Hz
Preset Speed 2	Adv Program	A411	Preset Freq	0.01s	0	19	Preset Speed 2	0.01Hz
Preset Speed 3	Adv Program	A412	Preset Freq	0.01s	0	20	Preset Speed 3	0.01Hz
Preset Speed 4	Adv Program	A413	Preset Freq	0.01s	0	21	Preset Speed 4	0.01Hz
Preset Speed 5	Adv Program	A414	Preset Freq	0.01s	01	025	Preset Speed 5	0.01Hz
Preset Speed 6	Adv Program	A415	Preset Freq	0.01s	01	026	Preset Speed 6	0.01Hz
Preset Speed 7	Adv Program	A416	Preset Freq	0.01s	01	027	Preset Speed 7	0.01Hz
Preset Speed 8	Adv Program	A417	Preset Freq	0.01s	01	028	Preset Speed 8	0.01Hz

Table 20





Commander C200/C300 Competitor Migration Guide.

*Siemens Sinamics G120C
to Commander
C200/C300*





1.0 Functionality Cross-Reference

The table below provides a cross reference of functionality between the Siemens Sinamics G120C and the Commander C200/300.

Functionality		
Communications		
MODBUS	✓	Option - KI485 Adapter
EtherNet/IP (on Board)	✓	Option - SI Ethernet
USS	✓	✗
PROFIBUS DP	✓	Option - SI PROFIBUS DP
PROFINET	✓	Option - SI PROFINET
Note: Drives are purchased with the comms options so check full part number FSAA to FSC Frame sizes available with PROFINET, PROFIBUS, EtherNet/IP, USS/Modbus RTU/FSD to FSF Frame sizes are available with PROFINET and EtherNet/IP		
Reference		
Jog	✓	✓
Bi-polar reference	✓	✓
Fixed Speed SetPoints/Preset speeds	4	8
Skip frequencies	4	3
Skip frequencies dead band	✓	✓
Local/Remote (Keypad)	✓	✓
Acceleration Rates	1	8
Deceleration Rates	1	8
Run Reverse	✓	✓
Control		
Motor Type Selection	Induction Synchronous Reluctance Siemens Motor Selection	Induction Only Only Induction Motors from the Siemens range
Technology Application Operating/ Open/closed Loop Mode (P0500 & P1300)	✓	Open Loop Voltage Mode P5.014/ and RFCA Mode
Control Mode: Linear V/f	✓	✓
Control Mode: Quadratic V/f	✓	✓
Control Mode: Dynamic V/f	✓	✓
Control Mode: Set Point V/f	✓	✓
Stator Resistance Compensation	✓	✓
Slip Compensation	✓	✓
Auto-tune: Static	✓	✓
Auto-tune: Rotating	✓	✓
PWM Switching Frequency	4-16kHz	0.677 to 16 (0.677 and 1kHz available on Frames 1 to 4 only)
Flying Start /Catch a spinning motor	✓	✓
Stop mode: Quick	✓	✓
Stop mode: Coast	✓	✓
DC Injection Braking	✓	✓
Brake settings (DC bus) (Compound)	✓	✓
Supply loss detection (Line Phase Failure)	✓	✓

1.0 Functionality Cross-Reference (continued)

Functionality		
I/O Functions		
Analogue input control	✓	✓
Analogue output control	✓	✓
Temperature monitoring	✓	✓
Digital input control	✓	✓
Digital output control	✓	✓
Relay control	✓	✓
Mechanical brake controller	✓	✓
Motorised pot	✓	✓
Logic function control	✓	✓
Timer function control	✓	✓
Limit switch control	✓	✓
PID control	✓	✓
General		
Displayable Parameters	All	All
Energy meter	✓	✓
Trip time stamping	✓	✓
Previous trip data parameters	10	8
Run time log	✓	✓
Diagnostics	✓	✓
Auto-reset after trip	✓	✓
Power loss ride through	✓	✓
Control word control	✓	✓
Cloning	✓	✓
Security	Limited	✓

Functionality		
I/O		
+10V user output	✓	✓
+24V user output	✓	✓
Digital Inputs	6	5
Digital Outputs	1	1
Analogue Inputs	1	2
Analogue Outputs	1	1
Relay	1	1
Safe Torque Off	2	2

Table 1

2.0 Model Number Cross-Reference Based on Headline Nominal Power Ratings

The table below provides a cross-reference between the Siemens Sinamics G120C and the Commander C200/C300 equivalents based on the nominal power rating. Refer to *Section 6.0 Drive Ratings* for a more detailed cross reference including continuous output current.



					
Model Number	kW	Frame Size	Model Number	kW	Frame Size
400V					
6SL3210-1KE11-8__2	0.55	FSA	CXXX-2400018	0.55	2
6SL3210-1KE12-3__2	0.75	FSA	CXXX-2400023	0.75	2
6SL3210-1KE13-2__2	1.1	FSA	CXXX-2400032	1.1	2
6SL3210-1KE14-3__2	1.5	FSA	CXXX-2400041	1.5	2
6SL3210-1KE15-8__2	2.2	FSA	CXXX-3400056	2.2	3
6SL3210-1KE17-5__1	3.0	FSA	CXXX-3400073	3	3
6SL3210-1KE18-8__1	4.0	FSA	CXXX-3400094	4	3
6SL3210-1KE21-3__1	5.5	FSB	CXXX-4400135	5.5	4
6SL3210-1KE21-7__1	7.5	FSB	CXXX-4400170	7.5	4
6SL3210-1KE22-6__1	11	FSC	CXXX-5400270	11	5
6SL3210-1KE23-2__1	15	FSC	CXXX-5400300	15	5
			CXXX-6400350	15	6
6SL3210-1KE23-8__1	18.5	FSC	CXXX-6400420	18.5	6
6SL3210-1KE24-4__1	22	FSD	CXXX-6400470	22	6
6SL3210-1KE26-0__1	30	FSD	CXXX-7400660	30	7
6SL3210-1KE27-0__1	37	FSD	CXXX-7400770	37	7
6SL3210-1KE28-4__1	45	FSD	CXXX-7401000	45	7
6SL3210-1KE31-1__1	55	FSE	CXXX-8401340	55	8
6SL3210-1KE31-4__1	75	FSF	CXXX-8401570	75	8
6SL3210-1KE31-7__1	90	FSF	CXXX-9402000	90	9
6SL3210-1KE32-1__1	110	FSF	CXXX-9402240	110	9
6SL3210-1KE32-4__1	132	FSF	CXXX-10402700	132	10

Table 2

3.0 Environmental Conditions

The table below provides a summary on the environmental conditions of the Siemens Sinamics G120C and the Commander C200/C300.



Specification		
Storage temperature	-40 to 70°C	-40°C to 60°C
Operating temperature without de-rate	0 - 40°C Max	-20°C to 40°C
Operating conditions with de-rate	0 - 50°C with reduced output current see Siemens documentation for Frame size exceptions	40°C to 60°C
Humidity	95%, non-condensing	95% Non-condensing
Altitude	1000M – no de-rate 1000-4000M derating to 70% at 4000M	1000m – No de-rate 1000m to 3000m - 1% de-rate/100m
IP Rating	IP20	IP20 – Pollution degree 2 IP66 - Pump drive F600
Vibration	Long-term storage in the transport packaging according to Class 1M2 according to EN 60721-3-1: 1997 Transport in the transport packaging according to Class 2M3 according to EN 60721-3-2: 1997 Vibration in operation according to Class 3M2 according to EN 60721-3-3: 1995	Testing in each of three mutually perpendicular axes in turn. Referenced standard: IEC 60068-2-6: Test Fc: Frequency range: 5 to 500 Hz Severity: 3.5 mm peak displacement from 5 to 9 Hz 10 m/s ² peak acceleration from 9 to 200 Hz 15 m/s ² peak acceleration from 200 to 500 Hz
Harsh Environments	No data provided	IEC60721-3-3 3C3 EN60068-2-60

Table 3

4.0 Electromagnetic Compatibility (EMC)

The table below provides a summary on the EMC standards supported by the Siemens Sinamics G120C and the Commander C200/C300.



Immunity Compliance		
IEC 61000-4-2 Electrostatic Discharge	2014/30/EU EMC Directive (EMC)	Supported
IEC 61000-4-3 Radio frequency radiated field	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-4-4 Fast Transient Burst	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-4-5 Surges	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-4-6 Conducted Radio Frequency	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-4-11 Voltage Dips and Interruptions	2014/30/EU EMC Directive (EMC)	Supported
IEC61000-6-1 Generic immunity standard for the residential, commercial and light industrial environments	Indirectly via 2014/30/EU EMC Directive (EMC)	Supported
IEC61000-6-2 Generic immunity standard for the industrial environment	Indirectly via 2014/30/EU EMC Directive (EMC)	Supported
IEC 61800-3 Immunity Requirements for adjustable speed power drive systems	Supported	Supported

Table 4

5.0 Approvals

The table below provides a summary on the approvals the Siemens Sinamics G120C Drive Here and the Commander C200/C300 adhere to.

Approvals		
UL	Supported	Supported
C tick	Supported	Supported
CE	Supported	Supported
TUV	Supported	Supported
EAC	Supported	Supported
KC	Supported Only some are approved that will have KC signature on the rating plate	Currently under approval

Table 5

6.0 Drive Ratings

The drive rating tables featured below conform to the terminology used in the Siemens Sinamics G120C Installation Manual. The nominal output current listed in the tables would be equivalent to the maximum continuous output current list in the Control techniques documentation. For the peak currents that can be achieved using the overload of the drive refer to the maximum transient current.

6.1 400V Ratings Based on Model Number Cross-Reference

The table below provides a cross reference of the **400V drive ratings** between the Siemens Sinamics G120C and the Commander C200/C300 drives.



										
Model No.	kW	HP	Nominal Output Current A	Hi Overload Mode 200% for 3 s A	Model No.	kW @ 400V	HP @ 460V	Max cont. Output Current A	Open Loop Peak Current A	RFC Peak Current A
6SL3210-1KE11-8__2	0.55	0.75	1.7	3.4	02400018	0.55	0.75	1.8	2.7	3.2
6SL3210-1KE12-3__2	0.75	1.0	2.2	4.4	02400023	0.75	1.0	2.3	3.5	4.1
6SL3210-1KE13-2__2	1.1	1.5	3.1	6.2	02400032	1.1	1.5	3.2	4.8	5.8
6SL3210-1KE14-3__2	1.5	2.0	4.1	8.2	02400041	1.5	2.0	4.1	6.2	7.4
6SL3210-1KE15-8__2	2.2	3.0	5.6	11.2	03400056	2.2	3.0	5.6	8.4	10.1
6SL3210-1KE17-5__1	3.0	4.0	7.3	14.6	03400073	3.0	3.0	7.3	11.0	13.1
6SL3210-1KE18-8__1	4.0	5.0	8.8	17.6	03400094	4.0	5.0	8.4	14.1	16.9
					04400135	5.5	7.5	13.5	20.3	24.3
6SL3210-1KE21-3__1	5.5	7.5	12.5	25	04400135	5.5	7.5	13.5	20.3	24.3
6SL3210-1KE21-7__1	7.5	10	16.5	33	04400170	7.5	10.0	17	25.5	30.6
6SL3210-1KE22-6__1	11	15	25	50	05400270	11.0	20.0	27.0	40.5	54.0
					05400300	15.0	20.0	30.0	45.0	60.0
6SL3210-1KE23-2__1	15	20	31	62	06400350	15.0	25.0	35.0	52.5	70.0
6SL3210-1KE23-8__1	18.5	25	37	74	06400420	18.5	30.0	42.0	63.0	84.0
6SL3210-1KE24-4__1	22	30	43	86	06400470	22.0	30.0	47.0	70.5	94.0
6SL3210-1KE26-0__1	30	40	58	116	07400660	30	50	66	99	132
6SL3210-1KE27-0__1	37	50	68	136	07400770	37	60	77	115.5	154
6SL3210-1KE28-4__1	45	60	82.5	165	07401000	45	75	100	150	200
6SL3210-1KE31-1__1	55	75	103	206	08401340	55	100	134	201	268
6SL3210-1KE31-4__1	75	100	136	272	08401570	75	125	157	235.5	314
6SL3210-1KE31-7__1	90	120	164	328	09402000	90	150	200	300	350
6SL3210-1KE32-1__1	110	150	201	402	09402240	110	150	224	336	392
6SL3210-1KE32-4__1	132	180	237	474	10402700	132	200	270	405	472.5

Table 6

Siemens Sinamics G120C values based on 4kHz

Commander CXXX values based on 3kHz

6.2 Braking Resistor Ratings

Based on the equivalent drives specified in table 2, this section provides details on the braking resistor specifications for the Siemens Sinamics G120C and the Commander C200/C300.



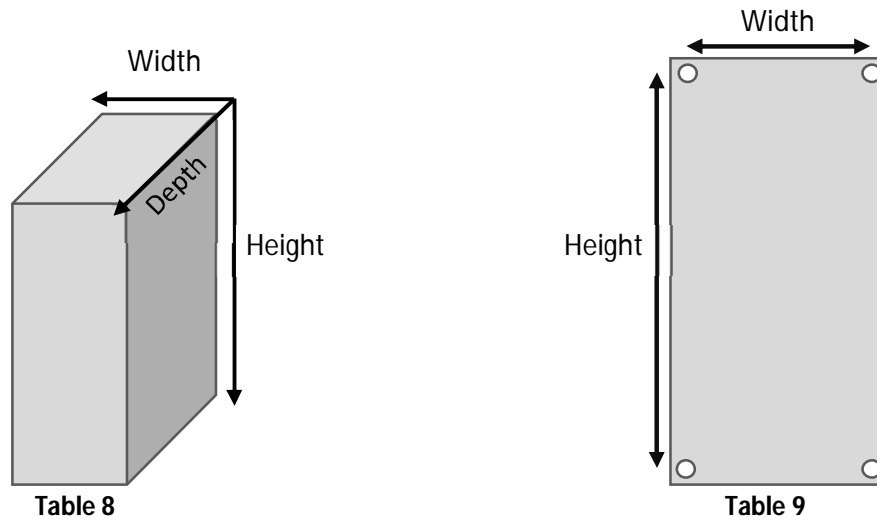
							
Model Number	Minimum Resistance Ω	Pulse power kW	Rated power kW	Model Number	Minimum Resistance Ω	Instant. power kW	Cont. Resistor power rating kW
400V Drives							
6SL3210-1KE11-8__2	390	2.0	0.1	CXXX-2400018	270	2.2	0.55
6SL3210-1KE12-3__2	390	2.0	0.1	CXXX-2400023	270	2.2	0.75
6SL3210-1KE13-2__2	390	2.0	0.1	CXXX-2400032	270	2.2	1.1
6SL3210-1KE14-3__2	390	2.0	0.1	CXXX-2400041	270	2.2	1.5
6SL3210-1KE15-8__2	140	4.0	0.2	CXXX-3400056	100	6.0	2.2
6SL3210-1KE17-5__1	140	4.0	0.2	CXXX-3400073	100	6.0	3
6SL3210-1KE18-8__1	140	4.0	0.2	CXXX-3400094	100	6.0	4
6SL3210-1KE21-3__1	75	7.5	0.375	CXXX-4400135	50	11.2	5.5
6SL3210-1KE21-7__1	75	7.5	0.375	CXXX-4400170	50	11.2	7.5
6SL3210-1KE22-6__1	30	18.5	925	CXXX-5400270	38	17.8	16.2
6SL3210-1KE23-2__1	30	18.5	925	CXXX-5400300	22	30.8	19.6
				CXXX-6400350	20	33.8	21.6
6SL3210-1KE23-8__1	30	18.5	925	CXXX-6400420	20	33.8	25
6SL3210-1KE24-4__1	25	22	1.1	CXXX-6400470	20	33.8	32.7
6SL3210-1KE26-0__1	15	37	1.85	CXXX-7400660	7.5	90.2	30
6SL3210-1KE27-0__1	15	37	1.85	CXXX-7400770	7.5	90.2	37
6SL3210-1KE28-4__1	10	55	2.75	CXXX-7401000	7.5	90.2	45
6SL3210-1KE31-1__1	10	55	2.75	CXXX-8401340	6.3	107.4	55
6SL3210-1KE31-4__1	7.1	77	3.85	CXXX-8401570	6.3	107.4	75
6SL3210-1KE31-7__1	7.1	77	3.85	CXXX-9402000A	3.6	187.8	90
				CXXX-9402000E	2.6	260	90
6SL3210-1KE32-1__1	5	110	5.5	CXXX-9402240A	3.6	187.8	110
				CXXX-9402240E	2.6	260	110
6SL3210-1KE32-4__1	5	110	5.5	CXXX-10402700	3.1	218.1	132

Table 7

7.0 Mechanical Installation

Based on the equivalent drives specified in table 2, this section provides details on the dimension differences between the Siemens Sinamics G120C and the Commander C200/C300. The dimensions are listed in tables 8 and 9 are based on the dimensions in the diagrams below.



7.1 Overall Dimensions and Weight

Based on the equivalent drives specified in table 2, this section provides details on the mounting dimension differences between the Siemens Sinamics G120C and the Commander C200/C300. The Siemens Sinamics G120C has multiple depths and weights per frame size (FSA through to FSF) based on the power rating. For simplicity, frame sizes have been condensed to those with unique mounting dimensions and the maximum depth and weights for that frame size have been listed.



									
Frame	Height	Width	Depth	Weight (No Filter)	Frame	Height	Width	Depth	Weight
FSA	173mm (6.81in)	73mm (2.18in)	155mm (6.10in)	1.2kg (2.64lb)	1	160mm (6.3in)	75mm (2.95in)	130mm (5.1in)	0.75kg (1.85lb)
FSA	196mm (7.92in)	73mm (2.18in)	203mm (7.99in)	1.7kg (3.75lb)	2	205mm (8.07in)	75mm (2.95in)	150mm (5.9in)	1.3kg (3.00lb)
FSB	196mm (7.92in)	100mm (3.94in)	203mm (7.99in)	2.3kg (5.06lb)	3	226mm (8.9in)	90mm (3.54in)	160mm (6.3in)	1.5kg (3.30lb)
FSC	295mm (11.61in)	140mm (5.51in)	203mm (7.99in)	4.4kg (9.68lb)	4	277mm (10.9in)	115mm (4.53in)	175mm (6.89in)	3.13kg (6.90lb)
FSD	472mm (18.58in)	200mm (7.87in)	237mm (9.33in)	18kg (39.6lb)	5	365mm (14.37in)	143mm (5.63in)	200mm (7.87in)	7.4kg (16.30lb)
FSE	551mm (21.7in)	275mm (10.83in)	237mm (9.33in)	27kg (59.4lb)	6	365mm (14.37in)	210mm (8.27in)	227mm (8.94in)	14kg (30.90lb)
FSF	708mm (27.87in)	305mm (12.01)	357mm (14.06in)	27kg (59.4lb)	7	508mm (20.0in)	270mm (10.63in)	280mm (11.02in)	28kg (61.70lb)

Table 8

7.2 Mounting Hole Dimensions

Based on the equivalent drives specified in table 2, this section provides details on the mounting hole dimension differences between the Siemens Sinamics G120C and the Commander C200/C300.



							
Frame	Height	Width	Mounting Bolt	Frame	Height	Width	Mounting Holes
FSA	160mm (6.3in)	Centrally mounted	2 × Ø4mm (2 × Ø0.18in)	1	143mm (5.70in)	53mm (2.08in)	4 × Ø5mm (4 × Ø0.2in)
FSA	186mm (7.32in)	Top centrally mounted. Bottom 62.3mm (2.54in)	3 × Ø4mm (3 × Ø0.18in)	2	194mm (7.63in)	55mm (2.17in)	4 × Ø5mm (4 × Ø0.2in)
FSB	186mm (7.32in)	80mm (3.15in)	4 × Ø4mm (4 × Ø0.18in)	3	215mm (8.46in)	70.7mm (2.80in)	4 × Ø5mm (4 × Ø0.2in)
FSD	283MM (11.14in)	118mm (4.65in)	4 × Ø5mm (4 × Ø0.2in)	4	265mm (10.43in)	86mm (3.40in)	4 × Ø6mm (4 × Ø0.23in)
FSE	430mm (16.93in)	170mm (6.7in)	4 × Ø5mm (4 × Ø0.2in)	5	375mm (14.76in)	106mm (4.17in)	4 × Ø6.5mm (4 × Ø0.26in)
FSD	509mm (20.04in)	230mm (9.06in)	4 × Ø6mm (4 × Ø0.23in)	6	378mm (14.88in)	196mm (7.72in)	4 × Ø7mm (4 × Ø0.27in)
FSF	680mm (26.77in)	270mm (4.87in)	4 × Ø8mm (4 × Ø0.315in)	7	538mm (21.18in)	220mm (8.66in)	4 × Ø9mm (4 × Ø0.27in)

Table 9

7.3 Frame Size/Voltage Alignment



	
400V	
FSA	2/3
FSA	3/4
FSB	4/5
FSC	5/6
FSD	6/7
FSE	8
FSF	8/9/10

Table 10

7.4 Mounting Clearance



			
Temperature is Dependant on mounting criteria			
Frame size	Dimension	Distance	
FSA	Above	80mm (3.15in)	100mm (50mm where ambient temp is 35°C or less, or the average Output Current is derated by 20%) 0 100mm (50mm where ambient temp is 35°C or less, or the average Output Current is derated by 20%)
FSA	Between Drives	Zero	
FSB	Sides	Zero	
FSB	Below	100mm (3.94in)	
FSD	Above	300mm (11.81in)	
FSE	Between Drives	Zero	
FSE	Sides	Zero	
FSF	Below	350mm (13.77in)	

Table 11

8.0 Electrical Installation

8.1 Power Specifications

The table below provides a cross-reference of power specifications between the Siemens Sinamics G120C and the Commander C200/C300.



Specification		
Input Voltage Range	380V to 480V (-20%, +10%)	100V to 120V (±10%) 200V to 240V (±10%) 380V to 480V (±10%) 500 V to 575 V (±10 %) 500 V to 690 V (±10 %)
Input Frequency Range	47.5Hz to 63Hz	44 to 66Hz
Output Overload Rating	LO Overload Mode 150% for 3 s 110% for 57 s within a 300 s load cycle Hi Overload Mode 200% for 3 s, 150% for 57 s, within 300 s load cycle	150% for 60 s, 180% for 3 s (RFC-A)
Output Frequency Range	0 to 550Hz	0 to 599Hz
Output Switching Frequency Range	2 to 16kHz	0.667kHz to 16kHz*
Headline Rating Switching Frequency	4kHz	3kHz

Table 12

* 0.667kHz and 1kHz switching frequencies available on frame size 1 to 4 only.

8.2 Power Connections

The table below provides a cross-reference of power terminals between the Siemens Sinamics G120C and the Commander C200/C300. Refer to the product user guide for fusing and cable information.



			
Function	Terminal No.		Terminal No.
Supply L1	L1	➔	L1
Supply L2	L2	➔	L2-N/ L2
Supply L3	L3	➔	L3
Motor U phase	U2	➔	U
Motor V Phase	V2	➔	V
Motor W Phase	W2	➔	W
Braking	R1	➔	+
	R2	➔	BR
Earth	⏏ PE	➔	⏏

Table 13

8.3 Control Connections

The table below provides a cross-reference of control connections between the Siemens Sinamics G120C and the Commander C200/C300. Direction connection replacements are indicated via an arrow. For more information on the STO and other terminals refer to the individual drive's installation manual.



Default Function			
	Terminal No.		Terminal No.
	Frame Size FSAA-FSC	Frame Size FSD-FSF	
0V Common	X136-2, X137-13,28	X130-27, X132-2,13 X133-28	1
Analogue Input 0 (AI 0+)	X136-3	X132-3	5
Reference for Terminal 3 (AI 0-)	X136-4	X132-4	1
+10V User Output	X136-1	X132-1	4
4-20mA Analogue Input			2
Analogue Output 0 (AO 0+)	X137-12	X132-12	7
+24V User Output	X139-9	X133-9	9
Digital Input 0	X138-5	X133-5	11 (Enable Default)
Digital Input 1	X138-6	X133-6	10 (I/O) Terminal 10 on the Commander can be configured as a digital input or as a digital output
Digital Input 2	X138-7	X133-7	12
Digital Input 3	X138-8	X133-8	13
Digital Output DO 1+	X137-21		10 (I/O) *1
Relay Common (DO 0 Com)	X139-20	X134-20	Powerdrive F300 / Pump Drive F600
Relay Normally Open Contact (DO 0 NO)	X139-19	X134-19	Powerdrive F300 / Pump Drive F600
Relay Normally Closed Contact (DO 0 NC)	X139-18	X134-18	Powerdrive F300 / Pump Drive F600
Digital Input 4 (Default STO)	X138-16	X133-16	34 (Frame 1-4) 31 (Frame 5-9)
			33 Link to 1 (Frame 1-4) 32 Link to 1 (Frame 5-9) 0V Common
Digital Input 5 (Default STO)	X138-17	X133-17	31 (Frame 1-4) 35 (Frame 5-9)
			32 link to 1 (Frame 1-4) 36 Link to 1 (Frame 5-9) 0V Common

Table 14

*1 Commander C200/C300 I/O P8.031 would need declaring as an Output

9.0 Parameter Compare

9.1 Motor Data Parameter Comparison

The table below provides a cross reference between key parameters required for motor setup in the Siemens Sinamics G120C and Commander C200/C300.

Parameter Function	Parameter Location		Parameter Name	Units / Options	Parameter Location		Parameter Name	Units / Options
	Menu	Parameter			Menu	Parameter		
	Motor Type	MDS			P0300	Type Of Motor		
Rated Motor Voltage	MDS	P0304	Rated Motor Voltage	V	00	008	Motor Rated Voltage	1V
Rated Motor Current	MDS	P0305	Rated Motor Current	0.1A	00	006	Motor Rated Current	0.01A
Rated Motor Frequency	MDS	P0310	Rated Motor Frequency	1Hz	05	006	Motor Rated Frequency	0.01Hz
Rated Motor Speed	MDS	P0311	Rated Motor Speed	1rpm	00	007	Motor Rated Speed	0.1rpm
Rated Motor Power Factor	MDS	P0308	Rated Motor Power Factor	%	05	010	Motor Rated Power Factor	%
Rated Motor Power	MDS	P0307	Rated Motor Power	KW	NA	NA	NA	NA
Motor Torque Constant	MDS	P0316	Motor Torque Constant	Nm/A	05	032	Torque/Amp	Nm/A
V/F Characteristic	DDS	P1300	Open-loop/closed-loop control operating mode	Menu Options	00	079	User Drive Mode	Menu Options
Auto Tuning Selection	DDS	P5300	Autotuning Selection	Menu Options	5	012	Auto-tune	Menu Options
Starting Current Voltage Boost	DDS	P1310	Starting Current Voltage Boost	Menu Options	5	015	Low Frequency Voltage Boost	Menu Options
Torque Limit Upper	DDS	P1520	Upper Torque Limit	Nm	4	005	Motoring Current Limit	%
Torque Limit Lower	DDS	P1521	Lower Torque Limit	Nm	4	006	Regen Current Limit	%

Table 15

9.2 Application Parameter Comparison

The table below provides a cross reference between key parameters required for application setup in the Siemens Sinamics G120C Drive, and Commander C200/C300.

Parameter Function								
	Parameter Location		Parameter Name	Units	Parameter Location		Parameter Name	Units
	Menu	Parameter			Menu	Parameter		
Minimum Frequency	DDS	P1080 and P1106	Minimum Speed Minimum Speed Signal source	Hz/RPM	0	01	Minimum Frequency	0.01Hz
Maximum Frequency	DDS	P1081 and P1082	Maximum Speed Scaler Max Speed	Hz/RPM	0	02	Maximum Frequency	0.01Hz
Acceleration Rate	DDS	P1120	Acceleration Ramp Time	s	0	03	Acceleration Rate 1	0.1s
Deceleration Rate	DDS	P1121	Deceleration Ramp Time	s	0	04	Deceleration Rate 1	0.1s
Main SetPoint	DDS	P1070	Main SetPoint		1	1.014	Reference Selector	
Primary Command Source	CDS	P1070	Primary Command Source	Menu Options	1/6			Menu Options
						6.042	Control Word	
						6.043	Control Word Enable	
Technology Application/ Control Mode		P0500	Tec Application	Menu Options	5	5.014/	Open Loop Voltage Mode	Menu Options
					5	5.015	Low Freq Voltage Boost	
Quick Stop	CDS	P0848	Quick Stop	Menu Options	0	6.001	Stop Mode	Menu Options
					6	6.003	Supply Loss Mode	
Fixed Speed Setpoint 1	DDS	P1001	Fixed Speed Setpoint 1	Hz/RPM	0	18	Preset Speed 1	0.01Hz
Fixed Speed Setpoint 2	DDS	P1002	Fixed Speed Setpoint 2	Hz/RPM	0	19	Preset Speed 2	0.01Hz
Fixed Speed Setpoint 3	DDS	P1003	Fixed Speed Setpoint 3	Hz/RPM	0	20	Preset Speed 3	0.01Hz
Fixed Speed Setpoint 4	DDS	P1004	Fixed Speed Setpoint 4	Hz/RPM	0	21	Preset Speed 4	0.01Hz
Flying Restart Mode	DDS	P1200	Flying Restart	Menu Options	6	6.009	Catch a Spinning Motor	Menu Options

Table 16