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Automation Product Guide 2022

Low Voltage Products
Machine Safety Systems
Variable Frequency Drives
Power Quality Products
Motors
Programmable Logic Controllers
(PLC) & HMIs
Automation Solutions



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AUTOMATION GROUP LINE CARD – ABB PRODUCT LINE



Pilot Devices: Push Buttons / Switches / Indicators



Timers / Relays / Optocouplers



Power Supplies / Electronics Products



Disconnect Switches



Miniature Circuit Breaker



Molded Case Circuit Breakers



Contactors / Overloads / Motor Control



Starters



Soft Starters



Drives

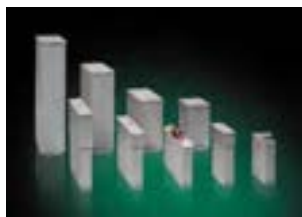


Motors



Safety Products



AUTOMATION GROUP LINE CARD – ABB PRODUCT LINE


Power Quality Products:
P.F. Correction Capacitors

☐ _____


Power Quality Products:
Harmonic Filters

☐ _____


PLCs / HMIs

☐ _____


Fuse Holders

☐ _____

Sectors:

- ☐ Plant utilities and building automation
- ☐ Water and waste water
- ☐ Food and beverage
- ☐ Pharmaceutical

- ☐ Cement and aggregate
- ☐ Oil and gas
- ☐ Plastic/Chemical
- ☐ Other (please specify)

- ☐ Mixers, dispersers, agitators
- ☐ Extruders
- ☐ Conveyors/material handling
- ☐ Fans, pumps, compressors
- ☐ Boilers, burner management
- ☐ Chillers, refrigeration, ovens, freezers, pasteurization
- ☐ Building HVAC
- ☐ Pollution control systems

- ☐ Co-generation
- ☐ Blending, chemical feeder and delivery systems
- ☐ Ozone and UV systems, solids handling, booster and other pumps
- ☐ Metal working presses and feed systems
- ☐ Payoff and winding
- ☐ Ball mills, crushers
- ☐ Other (please specify)

Customer Name: _____

Alliston

1-A Alderson Crt, Unit 1 & 2
Alliston, ON
Tel: (705) 434-9229
Fax: (705) 434-9339

Cambridge

890 Langs Dr,
Cambridge, ON
Tel: (519) 740-2912
Fax: (519) 740-2833

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Guelph, ON
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Fax: (519) 823-0068

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London, ON
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Mississauga, ON
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Fax: (905) 625-5714

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156 Edward Street,
Unit 3
St. Thomas, ON
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Fax: (519) 633-0995

Woodstock

1229 Seagrave Rd
Woodstock, ON
Tel: (519) 539-4789
Fax: (519) 539-4385

MOTOR RATING AND RATED CURRENT

The currents shown in the table are those given for standard three phase squirrel-cage motors. 1800 r.p.m. 60 Hz. Values quoted are for guidance only, they can vary depending on the number of poles and design.

Horse Power	110 – 120V			220 – 240V ① ②			380 – 415V		440-480V			550-600V		
	Single Phase	Two Phase	Three Phase	Single Phase	Two Phase	Three Phase	Single Phase	Three Phase	Single Phase	Two Phase	Three Phase	Single Phase	Two Phase	Three Phase
1/10	3.0	-	-	1.5	-	-	1.0	-	-	-	-	-	-	-
1/8	3.8	-	-	1.9	-	-	1.2	-	-	-	-	-	-	-
1/6	4.4	-	-	2.2	-	-	1.4	-	-	-	-	-	-	-
1/4	5.8	-	-	2.9	-	-	1.8	-	-	-	-	-	-	-
1/3	7.2	-	-	3.6	-	-	2.3	-	-	-	-	-	-	-
1/2	9.8	4.0	4.0	4.9	2.0	2.0	3.2	1.3	2.5	1.0	1.0	2.0	0.8	0.8
3/4	13.8	4.8	5.6	6.9	2.4	2.8	4.5	1.8	3.5	1.2	1.4	2.8	1.0	1.1
1	16	6.4	7.2	8	3.2	3.6	5.1	2.3	4	1.6	1.8	3.2	1.3	1.4
1 1/2	20	9.0	10.4	10	4.5	5.2	6.4	3.3	5	2.3	2.6	4	1.8	2.1
2	24	11.8	13.6	12	5.9	6.8	7.7	4.3	6	3	3.4	4.8	2.4	2.7
3	34	16.6	19.2	17	8.3	9.6	10.9	6.1	8.5	4.2	4.8	6.8	3.3	3.9
5	56	26.4	30.4	28	13.2	15.2	17.9	9.7	14	6.6	7.6	11.2	5.3	6.1
7 1/2	80	38	44	40	19	22	27	14	21	9	11	16	8	9
10	100	48	56	50	24	28	33	18	26	12	14	20	10	11
15	135	72	84	68	36	42	44	27	34	18	21	27	14	17
20	-	94	108	88	47	54	56	34	44	23	27	35	19	22
25	-	118	136	110	59	68	70	44	55	29	34	44	24	27
30	-	138	160	136	69	80	87	51	68	35	40	54	28	32
40	-	180	208	176	90	104	112	66	88	45	52	70	36	41
50	-	226	260	216	113	130	139	83	108	56	65	86	45	52
60	-	-	-	-	133	145	-	103	-	67	77	-	53	62
75	-	-	-	-	166	192	-	128	-	83	96	-	66	77
100	-	-	-	-	218	248	-	165	-	109	124	-	87	99
125	-	-	-	-	-	312	-	208	-	135	156	-	108	125
150	-	-	-	-	-	360	-	240	-	156	180	-	125	144
200	-	-	-	-	-	480	-	320	-	208	240	-	167	192
250	-	-	-	-	-	602	-	403	-	-	302	-	-	242
300	-	-	-	-	-	-	-	482	-	-	361	-	-	289
350	-	-	-	-	-	-	-	560	-	-	414	-	-	336
400	-	-	-	-	-	-	-	636	-	-	477	-	-	382
500	-	-	-	-	-	-	-	786	-	-	590	-	-	472

① To obtain full load currents for 200V and 208V motors, increase corresponding 220-240V ratings by 15% and 10%

② To obtain full load currents for 265V and 277V motors, decrease corresponding 220-240V ratings by 13% and 17%

AF LINE 3 POLE CONTACTORS

Features:

- **An Electronic coil** accepts a wide control voltage range (AC/DC **0.85 x Uc min..1.1 x Uc Max.** Where Uc is control voltage)
- AF contactors have **built-in surge protection** and do not require additional surge suppressors.
- **AF...Z contactors** are available for **direct control by PLC-output** $\geq 24\text{VDC } 500\text{mA}$ (AF09...AF30 contactors only, for other contactors, please use interposing relay)
- The built-in N.C. auxiliary contact is a mirror contact in compliance with annex F of IEC 60947-4-1.



Amp Ratings		Single-Phase HP Ratings		Three-Phase HP Ratings				Auxiliary Contacts		Part Number
AC-3	AC-1	120V	240V	208V	240V	480V	600V	NO	NC	100-250V 50/60Hz - DC Coil*
9	25	0.75	1.5	2	2	5	7.5	1	0	AF09-30-10-13
11	28	1	2	3	3	7.5	10	1	0	AF12-30-10-13
17	30	1.5	3	5	5	10	15	1	0	AF16-30-10-13
22	45	2	3	7.5	7.5	15	20	0	0	AF26-30-00-13
27	50	2	5	10	10	20	25	0	0	AF30-30-00-13
41	60	3	7.5	15	15	30	40	0	0	AF40-30-00-13
52	80	3	10	20	20	40	50	0	0	AF52-30-00-13
62	90	5	15	25	25	50	60	0	0	AF65-30-00-13
77	105	7.5	15	30	30	60	75	0	0	AF80-30-00-13
77	115	7.5	20	30	30	60	75	0	0	AF96-30-00-13
99	160	-	-	30	40	75	100	1	1	AF116-30-11-13
125	200	-	-	40	50	100	125	1	1	AF140-30-11-13

NOTE:

AC-1 – Non Inductive Loads

AC-3 – Inductive Loads

ACCESSORIES – AUXILIARY CONTACTS & COILS

Coil voltages and codes AF09...AF140		
Voltage 50/60 Hz	Voltage DC	Code
24...60	20...60(1)	11**
48...130	48...130	12
100...250	100...250	13
250...500	250...500	14

Note:

**AF...00-...11 not suitable for direct control by PLC-output.

Please note that spare coils for replacement are only available from AF400 onwards.



AUXILIARY CONTACTS					
NO	NC	Front Mount	Side Mount	Contact Type	Part No.
1	0	X		AF09...AF96	CA4-10
0	1	X		AF09...AF96	CA4-01
2	2	X		AF09...AF16...-30-10	CA4-22M
2	2	X		AF09...AF16...-30-01	CA4-22U
2	2	X		AF26...AF96...-30-00	CA4-22E
1	1		X	AF09...AF96	CAL4-11
1	1		X	AF116...AF140	CAL19-11
1	1		X	AF116...AF140	CAL19-11B

THERMAL OVERLOAD RELAYS

Features:

- Overload protection with **class 10 tripping category**
- Trip-free mechanism
- Ambient temperature compensation
- Suitable for direct mounting; separate mounting kit also available
- Phase loss sensitivity
- Manual/Automatic reset selectable



For Contactor Type	Setting Range Amps	Part No.
AF09.....AF30	0.10 ... 0.13	TF42-0.13
	0.13 ... 0.17	TF42-0.17
	0.17 ... 0.23	TF42-0.23
	0.23 ... 0.31	TF42-0.31
	0.31 ... 0.41	TF42-0.41
	0.41 ... 0.55	TF42-0.55
	0.55 ... 0.74	TF42-0.74
	0.74 ... 1.00	TF42-1.0
	1.00 ... 1.30	TF42-1.3
	1.30... 1.70	TF42-1.7
	1.70... 2.30	TF42-2.3
	2.30... 3.10	TF42-3.1
	3.10... 4.20	TF42-4.2
	4.20 ...5.70	TF42-5.7
	5.70 ...7.60	TF42-7.6
	7.60 ...10.0	TF42-10
	10.0 ...13.0	TF42-13
	13.0 ...16.0	TF42-16
	16.0 ...20.0	TF42-20
	20.0 ...24.0	TF42-24
AF40.....AF65	24.0 ...29.0	TF42-29
	29.035.0	TF42-35
	35.038.0/40.0	TF42-38
	22 ...28	TF65-28
	25 ...33	TF65-33
	30 ...40	TF65-40
	36 ...47	TF65-47
AF80.....AF96	44 ...53	TF65-53
	50...60	TF65-60
	57....67	TF65-67
	40 ...51	TF96-51
	48 ...60	TF96-60
AF116.....AF140	57 ...68	TF96-68
	65 ...78	TF96-78
	75 ...87	TF96-87
	84....96	TF96-96
	66....90	TF140DU-90
	80....110	TF140DU-110
	100....135	TF140DU-135
	110...142	TF140DU-142

ACCESSORIES – SEPARATE MOUNTING KITS

SEPARATE MOUNTING KITS (Reqd. when O/L not mounted directly onto a contactor)		
Description	Mounting Type	Part Number
TF42	Snap on mounting kit	DB42

AF LINE REVERSING CONTACTORS – KITS FOR FIELD ASSEMBLY

Each reversing contactor will include:

- 2 Side-by-side mounted 3-pole contactors
- 1 Mechanical and electrical interlocking device (electrical interlock includes 2NC contacts)**
- 1 BER.....Power connection set connecting main poles of the contactors

Amp Rating		Three-Phase HP Ratings				Contactors KM1 + KM2	Interlock Type	**NC Contacts for Elect. Int.	Connection Set
AC-3	AC-1	208V	240V	480V	600V	100-250V 50/60Hz - DC Coil*			
9	25	2	2	5	7.5	2xAF09-30-10-13	VEM4	Included	BER16-4
11	28	3	3	7.5	10	2xAF12-30-10-13	VEM4		BER16-4
17	30	5	5	10	15	2xAF16-30-10-13	VEM4		BER16-4
22	45	7.5	7.5	15	20	2xAF26-30-00-13	VEM4		BER38-4
27	50	10	10	20	25	2xAF30-30-00-13	VEM4		BER38-4
41	60	15	15	30	40	2xAF40-30-00-13	VM96-4	2xCAL4-11	BER65-4
52	80	20	20	40	50	2xAF52-30-00-13	VM96-4		BER65-4
62	90	25	25	50	60	2xAF65-30-00-13	VM96-4		BER65-4
77	105	30	30	60	75	2xAF80-30-00-13	VM96-4		BER96-4
77	115	30	30	60	75	2xAF96-30-00-13	VM96-4		BER96-4
99	160	30	40	75	100	2xAF116-30-11-13	VM19	2xCAL19-11B	BER140-4
125	200	40	50	100	125	2xAF140-30-11-13	VM19		BER140-4

NOTE:

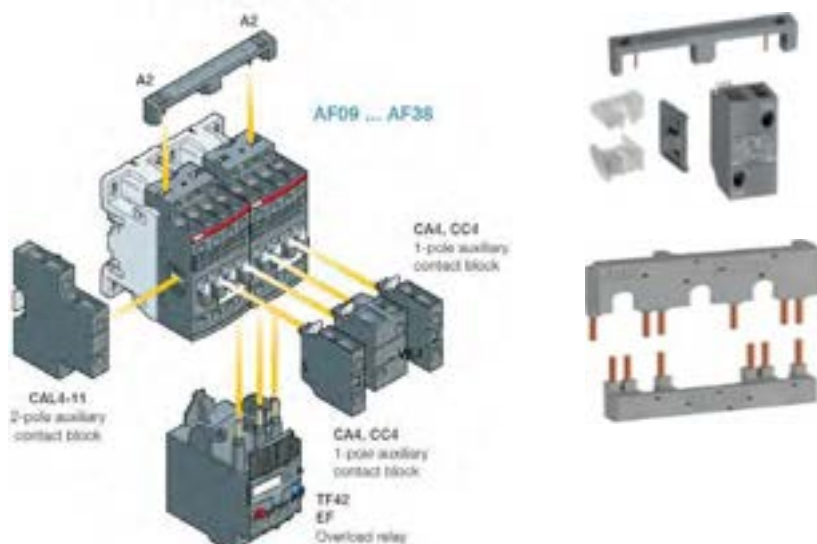
AC-1 – Non Inductive Loads

AC-3 – Inductive Loads

* For other coil voltages, please refer to the coil voltage chart on page 4.

Please note that spare coils for replacement are only available from AF400 onwards.

How to assemble:



VEM4....Mechanical and electrical interlock set

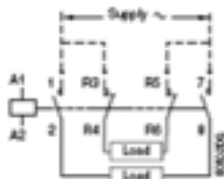
BER..-4 Connection set including
-Phase to Phase connection
-Parallel connection

AF LINE FOUR POLE CONTACTORS

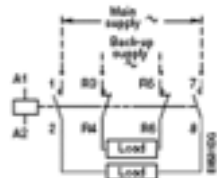
Features:

- CSA approved with maximum operating voltage of 600VAC 60Hz
- Available Main Pole Configurations: 4NO or 2NO+2NC

Single supply and two separate loads



Two separate supply and two separate loads



Applications

- 2 Loads with 2 separate supplies*
- 2 Separate loads with one supply*

General Purpose Current AC1 600VAC	Auxiliary Contacts		Open Type Part No.
	NO	NC	100-250V 50/60Hz - DC Coil**
4 N.O. MAIN POLES			
25	-	-	AF09-40-00-13
30	-	-	AF16-40-00-13
45	-	-	AF26-40-00-13
55	-	-	AF38-40-00-13
65	-	-	AF45-40-00-70
80	-	-	AF50-40-00-70
105	-	-	AF75-40-00-70
2 N.O. + 2 N.C. MAIN POLES			
25	-	-	AF09-22-00-13
30	-	-	AF16-22-00-13
45	-	-	AF26-22-00-13
55	-	-	AF38-22-00-13
65	-	-	AF45-22-00-70
105	-	-	AF75-22-00-70

NOTE*: Please note that these contactors are not suitable for a reversing starter or star-delta starter or for controlling a single load from two separate supplies.

**For other coil voltages, please refer to the coil voltage chart below.

ACCESSORIES – AUXILIARY CONTACTS

NO	NC	Front Mount	Side Mount	Contactor Type	Part No.
1	-	X	-	AF09...AF38-40-00 AF09...AF38-22-00	CA4-10
-	1	X	-		CA4-01
1	1	-	X		CAL4-11
3	1	X	-		CA4-31E+
2	2	X	-		CA4-22E+
1	-	X	-	AF45...AF75-40-00 AF45...AF75-22-00	CA5-10
0	1	X	-		CA5-01
2	2	X	-		CA5-22E
1	1	-	X		CAL5-11

ACCESSORIES - COILS

CONTACTOR COILS***	
For Contactors	Part No.
AF45...AF75	ZAF75 -***

Coil voltages and codes AF09...AF38	
Voltage 50/60 Hz-DC	Code
24...60 AC / 20...60 DC	11+++
48...130	12
100...250	13
250...500	14

Coil voltages and codes AF45...AF75		
Voltage 50/60 Hz	Voltage DC	Code
-	20...60	72++
48...130	48...130	69
100...250	100...250	70

(++) The connection polarities indicated close to the coil terminal must be respected: A1 for positive pole and A2 for negative pole.

***Please select coil voltage code from the chart when ordering spare coil.

+++ AF...00-...11 not suitable for direct control by PLC-output.

Please note that spare coils are available for replacement from AF45 onwards.

LIGHTING CONTACTORS

Features:

- CSA approved with maximum operating voltage of 600VAC 60Hz
- 3, 4, 8 and 12 Pole versions available (Specials on request)
- Electrically or mechanically held contactors

Applications:

- Tungsten filament lighting loads
- Electric discharge lighting loads
- Electric water heaters



No. of Poles	Amp Rating Lighting	Auxiliary Contacts		Open Type Part No.	NEMA 1 Enclosed Type* Part No.
		NO	NC	100-250VAC/DC, 50/60Hz Coil**	-
4	20	-	-	AF09-40-00-13L	*Please contact ABB Automation Group for further information.
8	20	-	-	AF09-80-00-13L	
12	20	-	-	AF09-120-00-13L	
4	30	-	-	AF16-40-00-13L	
8	30	-	-	AF16-80-00-13L	
12	30	-	-	AF16-120-00-13L	
4	45	-	-	AF26-40-00-13L	
8	45	-	-	AF26-80-00-13L	
12	45	-	-	AF26-120-00-13L	
4	50	-	-	AF38-40-00-13L	
3	65	-	-	AF40-30-00-13L	
3	80	-	-	AF52-30-00-13L	
3	90	-	-	AF65-30-00-13L	
3	105	-	-	AF80-30-00-13L	
3	115	-	-	AF96-30-00-13L	
3	160	1	1	AF116-30-11-13L	
3	200	1	1	AF140-30-11-13L	
3	250	1	1	AF190-30-11-13L	
3	300	1	1	AF205-30-11-13L	
3	400	1	1	AF265-30-11-84L	

*Factory modification accessories, pilot devices and control transformers are available

**Please refer to the following chart for more coil voltages

ACCESSORIES—AUXILIARY CONTACTS AND COILS

Coil voltages and codes AF09...AF140		
Voltage 50/60 Hz	Voltage DC	Code
24...60	20...60(1)	11**
48...130	48...130	12
100...250	100...250	13
250...500	250...500	14



AUXILIARY CONTACTS					
NO	NC	Front Mount	Side Mount	Contacteur Type	Part No.
1	0	X		AF09..AF96	CA4-10
0	1	X		AF09..AF96	CA4-01
2	2	X		AF09..AF16...-30-10	CA4-22M
2	2	X		AF09..AF16...-30-01	CA4-22U
2	2	X		AF26..AF96...-30-00	CA4-22E
1	1		X	AF09..AF96	CAL4-11
1	1		X	AF116..AF140	CAL19-11
1	1		X	AF116..AF140	CAL19-11B

CONTROL RELAYS - NF... TYPE, AC/DC OPERATED

Features:

- CSA/UL Approved
- DC operated version available
- NFZ with low consumption coil also available.
- Complete range of snap on accessories
- Also available control relays with spring or ring tongue terminals
- 3, 4 and 8 pole contact combinations available
- Offers mechanically linked auxiliary contacts for SAFETY circuit applications



1 st Stack		2 nd Stack		Part Number	100-250V 50/60HZ- DC Coil*
NO	NC	NO	NC		
2	2	-	-		NF22E-13
3	1	-	-		NF31E-13
4	-	-	-		NF40E-13
4	-	-	4		NF44E-13
4	-	1	3		NF53E-13
4	-	2	2		NF62E-13
4	-	3	1		NF71E-13
4	-	4	-		NF80E-13

Refer to page 7 for auxiliary contact ordering information

Refer to page 7 for coil code information. All "NF" relays use AF09...AF16 coils codes

DEFINITE PURPOSE CONTACTORS

Features:

- Double E magnet: optimal performance with low power consumption
- Coil is Class B insulation system with wide range of voltages
- 1 NO and 1 NC auxiliary contact blocks and SPDT contacts available on 3 pole version

Applications:

- Air conditioning, ventilation, refrigeration, pools and spas, compressors, pumps



No. of Poles	FLA	Max. 1 Phase HP		Max. 3 Phase HP Rating				Resistive Amps	Coil**	Part Number
		120V	240V	200/280V	240/277V	480V	600V			
2	20	2	3	-	-	-	-	30	120VAC	DP20C2P-1
2	20	2	3	-	-	-	-	30	24VAC	DP20C2P-F
2	30	2	3	-	-	-	-	40	120VAC	DP30C2P-1*
2	30	2	3	-	-	-	-	40	24VAC	DP30C2P-F*
2	40	2	3	-	-	-	-	50	120VAC	DP40C2P-1
2	40	2	3	-	-	-	-	50	24VAC	DP40C2P-F
3	20	1.5	3	7.5	7.5	7.5	7.5	30	120VAC	DP20C3P-1
3	20	1.5	3	7.5	7.5	7.5	7.5	30	24VAC	DP20C3P-F
3	30	2	5	10	10	15	20	40	120VAC	DP30C3P-1*
3	40	3	7.5	10	10	20	25	50	120VAC	DP40C3P-1*
3	50	3	10	15	15	25	25	65	120VAC	DP50C3P-1
3	60	5	10	20	25	30	30	75	120VAC	DP60C3P-1
3	75	5	15	20	25	40	40	93	120VAC	DP75C3P-1
3	90	7.5	20	25	30	50	50	120	120VAC	DP90C3P-1
4	30	2	5	10	10	10	-	40	120VAC	DP30C4P-1*
4	40	3	7.5	10	10	10	-	50	120VAC	DP40C4P-1

*Mostly stocked at Gerrie Branches.

** Please refer to the following chart for other coil voltages:

Coil Voltage Selection Chart						
Voltage	24VAC	120VAC	208/240VAC	277VAC	480VAC	575VAC
Suffix #	F	1	2	C	4	6

DRAF PLASTIC ENCLOSED STARTERS—SINGLE & THREE PHASE

Features:

- CSA/UL Ratings up to 15 HP, 600V max
- Compact space saving construction
- NEMA 4X Enclosure
- CSA approved pilot device options for field installation are available
- CSA approved for switching AC Ballasts, AC Incandescent and AC Heating loads



Single-Phase HP Ratings		Three-Phase HP Ratings				Pilot Devices	Options	Dimensions HxWxD (inches)	Part Number 100-250VAC/DC, 50/60Hz Coil
120V	240V	208V	240V	480V	600V				
0.75	1.5	2	2	5	7.5	Start/Stop	Please refer to table below	8.58"x4.21"x5.16"	DRAF09(Z)-13U^
1	2	3	3	7.5	10				DRAF12(Z)-13U^
2	3	5	5	10	15				DRAF16(Z)-13U^

Other coil voltages are available

^ Select appropriate overload from the overload selection chart on Page 12

Note: For single phase 120V application, add a power wire from T1 to T2 of O/L and from L2 to L3 of contactor.
For single phase 240V application, add a power wire from T2 of O/L to L3 contactor.

Coil Voltage Selection Chart				
Type	12-20VDC	24-60VAC 20-60VDC	100-250VAC/DC	250VAC/DC
DRAF	-	11	13	14
DRAF...Z*	20	21	23	-

*Low Consumption Coil

Pilot Device Field Installation Options:			
Emergency Stop	Pilot Light Green (RUN)	Pilot Light Red (OFF)	Two Position Selector Switch (Hand-Auto)
Part Number # DY-ESTOP	Part Number # DY-PLI-*	Part Number # DY-PLH-*	Part Number # DY-SL2

METAL ENCLOSED STARTERS—SINGLE PHASE 120V AND 240V

Features:

- CSA/UL Ratings up to 7.5HP, 120V and 15HP, 240V
- NEMA Ratings Size 00 to Size 3 are also available
- Pre-wired pilot devices and control transformer kits



METAL ENCLOSED, EEMAC1 COMPLETELY ASSEMBLED EXCEPT O/L RELAY & PILOT DEVICE KIT**						
120V, SINGLE PHASE, NON REVERSING STARTERS						
CSA Motor Switching Current	Contactor Size	Max. Motor HP Ratings 120V	Pilot Devices	Transformer	Dimensions HxWxD (inches)	Part Number 100-250VAC/ DC, 50/60Hz Coil
13.8	AF09	0.75	No**	No**	10"x6.75"x6.5"	PS-AFAX13*
20	AF16	1.5				PS-0FAX13*
24	AF30	2				PS-1FAX13*
34	AF52	3			17"x12"x7"	PS-2FAX13*
240V, SINGLE PHASE, NON REVERSING STARTERS						
CSA Motor Switching Current	Contactor Size	Max. Motor HP Ratings 240V	Pilot Devices	Transformer	Dimensions HxWxD (inches)	Part Number 100-250VAC/ DC, 50/60Hz Coil
10	AF09	1.5	No**	No**	10"x6.75"x6.5"	PS-AFBX13*
17	AF16	3				PS-0FBX13*
28	AF30	5				PS-1FBX13*
50	AF52	10			17"x12"x7"	PS-2FBX13*

Other coil voltages and larger horsepower ratings are available.

*Select appropriate overload from the overload selection chart on Page 15

**Select appropriate field modification kit from the selection chart on Page 15

METAL ENCLOSED STARTERS—THREE PHASE

Features:

- CSA/UL Ratings up to 125 HP, 600V max.
- NEMA Ratings Size 00 to Size 4 are also available
- NEMA 12 Dust Tight and NEMA 4 Water Tight enclosures available upon request
- Pre-wired pilot devices and control transformer kits

METAL ENCLOSED, EEMAC1 COMPLETELY ASSEMBLED EXCEPT O/L RELAY & PILOT DEVICE KIT**									
THREE PHASE, NON REVERSING STARTERS									
CSA Motor Switching Current	Contactor Size	Max. Motor HP Rating				Pilot Devices	Transformer	Dimensions HxWxD (inches)	Part Number 100- 250VAC/DC, 50/60Hz Coil
		200/ 208V	220/ 240V	460/ 480V	575/ 600V				
9	AF09	2	2	5	7.5	No**	No**	10"x6.75"x 6.5"	PS-AFSX13*
17	AF16	5	5	10	15				PS-0FSX13*
27	AF30	10	10	20	25				PS-1FSX13*
52	AF52	15	20	40	50			17"x12"x7"	PS-2FSX13*

METAL ENCLOSED FUSIBLE COMBINATION STARTERS—SINGLE PHASE

METAL ENCLOSED, EEMAC1 COMPLETELY ASSEMBLED EXCEPT O/L RELAY & PILOT DEVICE KIT**						
120V, SINGLE PHASE, NON REVERSING STARTERS						
CSA Motor Switching Current	Contactor Size	Max. Motor HP Ratings 120V	Pilot Devices	Transformer	Dimensions HxWxD (inches)	Part Number 100-250VAC/ DC, 50/60Hz Coil
13.8	AF09	0.75	No**	No**	20"x8.5"x8"	PS-AFAF13*
20	AF16	1.5				PS-0FAF13*
24	AF30	2				PS-1FAF13*
34	AF52	3			28"x12"x8"	PS-2FAF13*
240V, SINGLE PHASE, NON REVERSING STARTERS						
CSA Motor Switching Current	Contactor Size	Max. Motor HP Ratings 240V	Pilot Devices	Transformer	Dimensions HxWxD (inches)	Part Number 100-250VAC/ DC, 50/60Hz Coil
10	AF09	1.5	No**	No**	20"x8.5"x8"	PS-AFBF13*
17	AF16	3				PS-0FBF13*
28	AF30	5				PS-1FBF13*
50	AF52	10			28"x12"x8"	PS-2FBF13*

METAL ENCLOSED FUSIBLE COMBINATION STARTERS—THREE PHASE

METAL ENCLOSED, EEMAC1 COMPLETELY ASSEMBLED EXCEPT O/L RELAY & PILOT DEVICE KIT**									
THREE PHASE, NON REVERSING STARTERS									
CSA Motor Switching Current	Contac- tor Size	200/ 208V	220/ 240V	460/ 480V	575/ 600V	Pilot Devices	Trans- formers	Dimensions HxWxD (inches)	Part Number 100-250VAC/DC, 50/60Hz Coil
9	AF09	2	2	5	7.5	No**	No**	20"x8.5"x8"	PS-AFSF13*
17	AF16	5	5	10	15				PS-0FSF13*
27	AF30	10	10	20	25				PS-1FSF13*
52	AF52	15	20	40	50			28"x12"x8"	PS-2FSF13*

Other coil voltages and larger horsepower ratings are available.

* Select appropriate overload from the overload selection chart on Page 15.

** Select appropriate field modification kit from the selection chart on Page 15.

Fuses not included for the fusible disconnect. Please order appropriate 'J' type time delay fuses

FIELD MODIFICATION KITS FOR METAL ENCLOSED STARTERS

CONTROL CIRCUIT TRANSFORMERS C/W SECONDARY FUSING



Contactor Sizes	VA Rating	Prim. / Sec. Voltage	Part Number
AF09-AF16-AF26-AF52-AF80	50	600 / 120	PS-50-600/120
		600 / 24	PS-50-600/24
		208 / 120	PS-50-208/120
		208 / 24	PS-50-208/24

PILOT DEVICE KITS



Pilot Devices	Legend Plates	Part Number
Start/Stop Momentary push button	START / STOP	PS-SS
Start/Stop Momentary push button with indication (130VAC)	START / STOP, ON	PS-SSI
Start/Stop Momentary push button with indication (24VAC)	START / STOP, ON	PS-SSIF
Selector Switch Off/On	OFF / ON	PS-SL2
Selector Switch Hand/Off/Auto	HAND / OFF / AUTO	PS-SL3
Selector Switch Hand/Off/Auto with indication (130VAC)	HAND / OFF / AUTO, ON	PS-SL3I
Selector Switch Hand/Off/Auto with indication (24VAC)	HAND / OFF / AUTO, ON	PS-SL3IF

Note: Other field modification kits are available.

TA THERMAL OVERLOAD RELAYS



For Contactor Type	Setting Range Amps	Part No.
AF09.....AF30	0.10 ... 0.13	TF42-0.13
	0.13 ... 0.17	TF42-0.17
	0.17 ... 0.23	TF42-0.23
	0.23 ... 0.31	TF42-0.31
	0.31 ... 0.41	TF42-0.41
	0.41 ... 0.55	TF42-0.55
	0.55 ... 0.74	TF42-0.74
	0.74 ... 1.00	TF42-1.0
	1.00 ... 1.30	TF42-1.3
	1.30... 1.70	TF42-1.7
	1.70... 2.30	TF42-2.3
	2.30... 3.10	TF42-3.1
	3.10... 4.20	TF42-4.2
	4.20 ...5.70	TF42-5.7
	5.70 ...7.60	TF42-7.6
	7.60 ...10.0	TF42-10
	10.0 ...13.0	TF42-13
	13.0 ...16.0	TF42-16
	16.0 ...20.0	TF42-20
	20.0 ...24.0	TF42-24
AF40.....AF65	24.0 ...29.0	TF42-29
	29.035.0	TF42-35
	35.038.0/40.0	TF42-38
	22 ...28	TF65-28
	25 ...33	TF65-33
	30 ...40	TF65-40
	36 ...47	TF65-47
	44 ...53	TF65-53
	50....60	TF65-60
	57....67	TF65-67

MANUAL MOTOR PROTECTORS

Features:

- UL listed and CSA certified for Group Motor Installations up to 65kA
- Selectable ranges for FLA from 0.10 – 95A in trip class 10 & class 20
- 35mm DIN rail snap-on mounting
- Wide range of accessories
- **Type E** products available (MS132) for 480Y/277V or 600Y/347V circuits**
- Under voltage trip available



FLA Adjustment Range	Single-Phase HP Ratings		Three-Phase HP Ratings			Part Number**
	115V	230V	230V	460V	575V	
MS132						
.63 – 1.0	-	-	-	-	1/2	MS132-1.0
1.0 – 1.6	-	1/10	-	3/4	3/4	MS132-1.6
1.6 – 2.5	-	1/6	1/2	1	1.5	MS132-2.5
2.5 – 4.0	1/8	1/3	1	2	3	MS132-4.0
4.0 – 6.3	1/4	1/2	1.5	3	5	MS132-6.3
6.3 – 10	1/2	1.5	3	5	7.5	MS132-10
10 – 16	1	2	5	10	10	MS132-16
16 – 20	1.5	3	5	10	15	MS132-20
20 – 25	2	3	7.5	15	20	MS132-25
25 – 32	2	5	10	20	25	MS132-32

Note:

** For Type E applications, when ordering MS132 type manual motor protectors, please order MS132-S1-M3-XX from accessories listed below.



FLA Adjustment Range	Single-Phase HP Ratings		Three-Phase HP Ratings			Part Number
	115V	230V	230V	460V	575V	
MS165						
10 – 16	1	2	5	10	10	MS165-16
14 – 20	1.5	3	5	10	15	MS165-20
18 – 25	2	3	7.5	15	20	MS165-25
23 – 32	2	5	10	20	30	MS165-32
30 – 42	3	7.5	15	30	40	MS165-42
40 – 54	3	10	20	40	50	MS165-54
52 – 65	5	10	20	50	60	MS165-65

ACCESSORIES



AUXILIARY CONTACTS			
Description	Version	For MSP	Part Number
Side Mount	1NO + 1NC	MS132	MS132-HK1-11
Front Mount		MS165	MS132-HKF1-11
SIGNALING CONTACTS			
Right Side	1NO + 1NC	MS132 MS165	MS132-SK1-11
THREE PHASE FEEDER TERMINALS FOR TYPE E APPLICATIONS**			
65A / 600VAC	10...4 AWG	MS132	MS132-S1-M3-25
92A / 600VAC	8...2 AWG		MS132-S1-M3-35



BUSBARS FOR DIRECT MOUNTING OF CONTACTORS		
Contactor Type	For MSP	Part Number
AF09....AF16	MS132 up to 25A	BEA16-4
AF26....AF38	MS132 up to 10A	BEA26-4
AF26....AF38	MS132 12...16A	BEA38-4

22 MM COMPACT PILOT DEVICE (300VAC RATED)

PUSH BUTTONS, PILOT LIGHTS & SELECTOR SWITCHES

Features:

- Compact range: cost efficient, easy to use and reliable with “All-in-one” function
- Pilot lights and illuminated push buttons available with LED and filament bulbs
- High degree of protection IP66, NEMA 1, 3R, 4, 4X, 12, 13
- Other contact combinations available

PUSH BUTTONS (Contact blocks included)



Description	Colour	Contacts Included	Part Number
Flush Momentary	Black	1 NO	CP1-10B-10
	Red	1 NC	CP1-10R-01
	Yellow	1 NO	CP1-10Y-10
	Green	1 NO	CP1-10G-10
Extended Momentary	Black	1 NO	CP3-10B-10
	Red	1 NC	CP3-10R-01
Emergency Stop Twist Release, 40 mm	Red	1 NC	CE4T-10R-01
Emergency Stop Key Release, 40 mm	Red	1 NO + 1 NC	CE4K1-10R-11

2 POSITION SELECTOR SWITCHES NON-ILLUMINATED (Contact blocks included)



Description	Colour	Contacts Included	Part Number
Maintained, Both Positions	Black	1 NO	C2SS1-10B-10
Spring Return From Right		1 NO	C2SS3-10B-10

3 POSITION SELECTOR SWITCHES NON-ILLUMINATED (Contact blocks included)



Description	Colour	Contacts Included	Part Number
Maintained, All Positions	Black	2 NO	C3SS1-10B-20
Spring Return Left & Right			C3SS2-10B-20
Spring Return From Left			C3SS7-10B-20
Spring Return From Right			C3SS3-10B-20

FULL VOLTAGE PILOT LIGHTS – BA 9s BASE (Bulb not included)



Description	Colour	Part Number
Full Voltage Pilot Lights	Red	CL-100R
	Green	CL-100G
	Yellow	CL-100Y
	Blue	CL-100L
Filament bulb, BA 9s base, 24V	-	STD50456
Filament bulb, BA 9s base, 125V	-	STD50267

LED PILOT LIGHTS – WITH INTEGRATED LED SERVICE LIFE>50,000 HRS (bulb included)



Description	Colour	Part Number
Rated Voltage 24V, AC/DC	Red	CL2-502R
	Green	CL2-502G
	Yellow	CL2-502Y
	Blue	CL2-502L

LED PILOT LIGHTS – WITH INTEGRATED LED SERVICE LIFE>50,000 HRS (bulb included)



Description	Colour	Part Number
Rated Voltage 110-130V, AC	Red	CL2-513R
	Green	CL2-513G
	Yellow	CL2-513Y
	Blue	CL2-513L

22 MM MODULAR PILOT DEVICES (600VAC RATED)

PUSH BUTTONS, NON ILLUMINATED AND ILLUMINATED

Features:

- High degree of protection: IP66, NEMA 1, 3R, 4, 4X, 12, 13
- Snap on feature reduces installation time
- Low energy gold plated contact blocks available
- Black plastic bezel included; chrome bezel available upon request



Description	Colour	Part Number
PUSH BUTTON OPERATORS, NON-ILLUMINATED (Order Contact Holder, Contact Blocks Separate)		
(Order Contact Holder, Contact Blocks Separate)		
Flush Momentary	Black	MP1-10B
	Red	MP1-10R
	Yellow	MP1-10Y
	Green	MP1-10G
Set of 6 colour caps (Red, Green, Yellow, Blue, White, Black, Clear)	-	MP1-10M
Extended Momentary	Black	MP3-10B
	Red	MP3-10R
Set of 6 colour caps (Red, Green, Yellow, Blue, White, Black, Clear)	-	MP3-10M
PUSH BUTTON OPERATORS, ILLUMINATED** (Order Contact Holder, Contact Blocks, Lamp Block & Lamp Separate)		
Flush Momentary	Red	MP1-11R
	Yellow	MP1-11Y
	Green	MP1-11G
Set of 6 colour caps (Red, Green, Yellow, Blue, White, Clear)	-	MP1-11M
Flush Maintained	Red	MP2-11R
	Yellow	MP2-11Y
	Green	MP2-11G
Extended Momentary	Red	MP3-11R
	Green	MP3-11G
Set of 6 colour caps (Red, Green, Yellow, Blue, White, Clear)	-	MP3-11M
DOUBLE PUSH BUTTON OPERATORS, ILLUMINATED** (Order Contact Holder, Contact Blocks, Lamp Block and Lamp Separate) Yellow Lens With Flash Buttons		
Upper Button With Text "Start"	Green	MPD4-11Y
Lower Button With Text "Stop"	Red	



** 1) No contact block in the center position, lamp holder only.

2) For legend plates please refer to the chart on Page 20.

22 MM MODULAR PILOT DEVICES

SELECTOR SWITCHES, NON ILLUMINATED & ILLUMINATED



Description	Colour	Part Number
2 POSITION SELECTOR SWITCH OPERATOR, NON-ILLUMINATED** (Order Contact Holder, Contact Blocks Separate)		
Maintained, Both Positions	Black	M2SS1-10B
Momentary Spring Return From Right		M2SS3-10B
2 POSITION SELECTOR SWITCH OPERATOR, ILLUMINATED** (Order Contact Holder, Contact Blocks Separate)		
Maintained, Both Positions	Red	M2SS1-11R
Spring Return From Right		M2SS3-11R



Description	Part Number
2 POSITION KEY-OPERATED SELECTOR SWITCH OPERATOR** (Order Contact Holder, Contact Blocks Separate)	
Maintained, Key can be removed in both positions	M2SSK1-101*
Maintained, Key can be removed in middle position only	M2SSK2-101*
Momentary Spring Return From Right, Key can be removed in the middle position only	M2SSK3-101*



Description	Colour	Part Number
3 POSITION SELECTOR SWITCH OPERATOR, NON-ILLUMINATED** (Order Contact Holder, Contact Blocks Separate)		
Maintained, All Positions	Black	M3SS1-10B
Momentary Spring Return from Left and Right		M3SS2-10B
Momentary Spring Return From Right		M3SS3-10B
3 POSITION SELECTOR SWITCH OPERATOR, ILLUMINATED** (Order Contact Holder, Contact Blocks Separate)		
Maintained, All Positions	Red	M3SS1-11R
Spring Return From Left & Right		M3SS2-11R
Spring Return From Left		M3SS7-11R
Spring Return From Right		M3SS3-11R



Description	Part Number
3 POSITION KEY-OPERATED SELECTOR SWITCH OPERATOR** (Order Contact Holder, Contact Blocks Separate)	
Maintained, Key can be removed in all positions	M3SSK1-101*
Maintained, Key can be removed in middle position only	M3SSK2-101*
Momentary Spring Return From Left & Right, Key can be removed in middle position only	M3SSK3-101*
Momentary Spring Return From Right, Key can be removed in left position	M3SSK4-101*
Momentary Spring Return From Right, Key can be removed in all positions	M3SSK5-101*

Note:

*1) Other key codes are available upon request

**2) No contact block in the center position

3) For legend plates please refer to the chart on Page 20

22 MM MODULAR PILOT DEVICES

MUSHROOM & E-STOP PUSH BUTTONS, NON ILLUMINATED & ILLUMINATED



Description	Colour	Part Number
MUSHROOM PUSH BUTTON OPERATOR, NON-ILLUMINATED (Order Contact Holder, Contacts Blocks Separate)		
Momentary, 40mm Plastic	Red	MPM1-10R
	Yellow	MPM1-10Y
Momentary, 60mm Plastic	Red	MPM2-10R
	Yellow	MPM2-10Y
MUSHROOM PUSH BUTTON OPERATOR, ILLUMINATED** (Order Contact Holder, Contacts Blocks Separate)		
Momentary, 40mm Plastic	Red	MPM1-11R
	Yellow	MPM1-11Y
Momentary, 60mm Plastic	Red	MPM2-11R
	Yellow	MPM2-11Y
EMERGENCY STOP PUSH BUTTON OPERATOR, NON-ILLUMINATED (Order Contact Holder, Contacts Blocks Separate)		
Twist Release, 40mm Plastic (UL508 Cat.)	Red	MPET4-10R
Pull Release, 40mm Plastic (UL508 Cat.)		MPEP4-10R
Twist Release, 60mm Plastic		MPMT4-10R
Pull Release, 60mm Plastic		MPMP4-10R
EMERGENCY STOP PUSH BUTTON OPERATOR, ILLUMINATED** (Order Contact Holder, Contacts Blocks Separate)		
Twist Release, 40mm Plastic	Red	MPMT3-11R
Pull Release, 40mm Plastic		MPMP3-11R
Twist Release, 60mm Plastic		MPMT4-11R
Pull Release, 60mm Plastic		MPMP4-11R

**1) No contact block in the center position, lamp holder only.

2) For legend plates please refer to the chart on Page 20.

POTENTIOMETER



POTENTIOMETER		
With Resistor 10 kohm	Black Plastic Bezel	MT-110B

22 MM COMPACT AND MODULAR PILOT DEVICES—ACCESSORIES



ADAPTOR FOR USING 22MM PILOT DEVICES IN 30MM MOUNTING HOLES (COMPACT & MODULAR)	
Black Plastic	KA1-8029
Chrome Metal	KA1-8030
ADAPTOR FOR USING MODULAR 22MM E-STOP PUSH BUTTONS IN 30MM MOUNTING HOLES	
Black Plastic	KA1-8027
Chrome Metal	KA1-8028



Description	Part Number
BEZEL FOR COMPACT AND MODULAR RANGE PUSH BUTTONS	
Chrome Metal	KA1-8021
BEZEL FOR COMPACT RANGE SELECTOR SWITCHES	
Chrome Metal	KA1-8078
BEZEL FOR MODULAR RANGE SELECTOR SWITCHES	
Chrome Metal	KA1-8024



Description	Part Number
CONTACT HOLDER	
Holder for 3 blocks	MCBH-00
Holder for 5 blocks	MCBH5-00
AUXILIARY CONTACTS	
1NO Single contact block without holder	MCB-10
1NC Single contact block without holder	MCB-01
1NO + 1NC Double contact block without holder	MCB-11
1NO with gold plated contacts	MCB-10G
1NC with gold plated contacts	MCB-01G
LAMP BLOCKS (<i>Mounts in the center position; Lamp not included</i>)	
Lamp block for 2W, max 230V AC/DC bulb or LED	MLB-1
Lamp block for 2W, max 230V AC/DC bulb or LED (Base Mount)	MLB-1B
Transformer block with lamp holder for front mounting BA 9s base 120/24VAC	KTR1-1011

*NOTE: LED Bulbs are Ba9s Base



LAMPS		
Description	Colour	Part Number
LED Bulb Standard, 24V AC/DC*	Red	KA2-2021
LED Bulb Standard, 24V AC/DC*	Green	KA2-2022
LED Bulb Standard, 24V AC/DC*	Yellow	KA2-2023
LED Bulb Standard, 24V AC/DC*	Blue	KA2-2024
LED Bulb Standard, 24V AC/DC*	White	KA2-2025
LED Bulb Standard, 120V AC*	Red	KA2-2131
LED Bulb Standard, 120V AC*	Green	KA2-2132
LED Bulb Standard, 120V AC*	Yellow	KA2-2133
LED Bulb Standard, 120V AC*	Blue	KA2-2134
LED Bulb Standard, 120V AC*	White	KA2-2135

22MM COMPACT AND MODULAR PILOT DEVICES—ACCESSORIES

LEGEND PLATES—FIXED NAME PLATES SILVER/GREY/A-FIXLUMINUM



Description	Type	Part Number
Legend Plates	OFF	CBK-NPE10
	ON	CBK-NPE11
	OPEN	CBK-NPE12
	RAISE	CBK-NPE13
	RUN	CBK-NPE16
	SLOW	CBK-NPE18
	START	CBK-NPE19
	STOP	CBK-NPE20
	CLOSE	CBK-NPE1
	DOWN	CBK-NPE2
	EMERGENCY STOP	CBK-NPE3
	UP	CBK-NPE21
	POWER ON	CBK-NPE35
	HAND/AUTO	CBK-NPE22
	OFF/ON	CBK-NPE24
	FWD/REV	CBK-NPE32
	JOG	CBK-NPE40
	HAND/ O / AUTO	CBK-NPE26
	FWD/ O / REV	CBK-NPE33
	POTENTIOMETER (Scale: 0-10)	CBK-NPEPOT

SPECIAL LEGEND PLATES FOR PLASTIC ENCLOSURES (HORIZONTAL MOUNTING)

Description	Part Number
Legend Plate	Emergency Stop
	MA6-1026

SPECIAL LEGEND PLATES FOR PLASTIC ENCLOSURES (VERTICAL MOUNTING)



Description	Part Number
Legend Plate	Emergency Stop
	MA6-1101

22 MM PILOT DEVICES—PLASTIC ENCLOSURE ONLY



Description	Colour	No. of Holes	Part Number
IP 66, NEMA 4X	Dark Grey / Light Grey	1 Hole	MEP1-0
	Yellow / Light Grey	1 Hole	MEPY1-0
	Dark Grey / Light Grey	2 Holes	MEP2-0
	Dark Grey / Light Grey	3 Holes	MEP3-0

ASSEMBLED PUSH BUTTON STATIONS – PLASTIC ENCLOSURE*



Description	Part Number
EMERGENCY STOP, twist release 40mm, 2 NC (No Legend Plate)	MEPY1-1005
START-STOP (c/w Legend Plate)	MEP2-1991

*1) Enclosed Push Button Stations are CSA/UL Type 1, 3R, 4, 4X, 12, 13

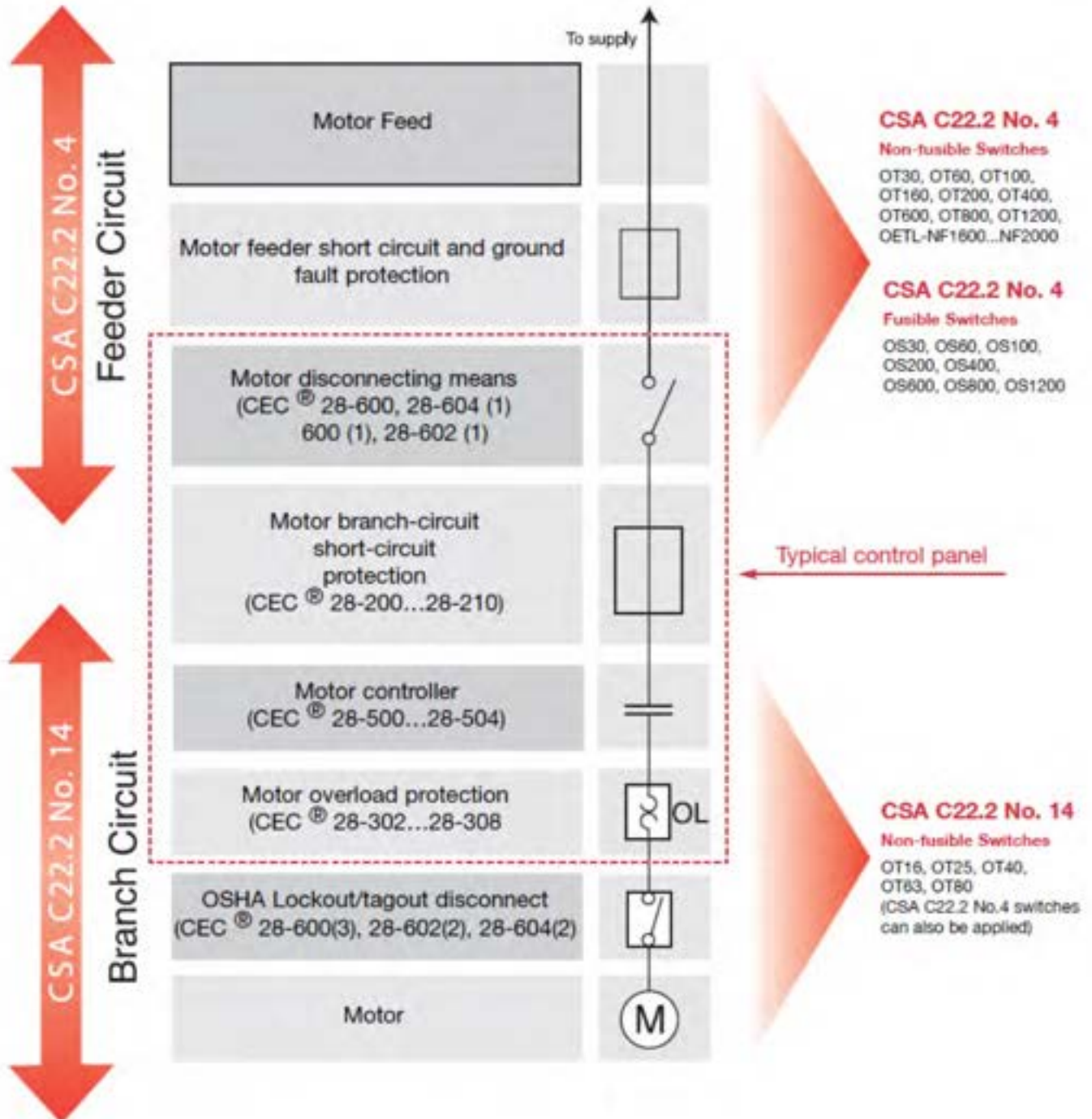
CONTACT BLOCKS FOR REAR MOUNTING (PLASTIC ENCLOSURES)



Description	Part Number
CONTACT BLOCK	
1 NO	MCB-10B
1 NC	MCB-01B
DOUBLE CONTACT BLOCK	
2 NO	MCB-20B
2 NC	MCB-02B
1 NO + 1 NC	MCB-11B



Use of CSA C22.2 No. 4 & No. 14 Disconnects According to CEC® Section 28



ENCLOSED MANUAL MOTOR CONTROLLERS - CSA 22.2 NO. 14

SUITABLE AS MOTOR DISCONNECTS OR ROOFTOP UNITS AND OTHER MOTOR APPLICATIONS

Features:

- cULus Approval, suitable as motor disconnect per CSA C22.2.No.14
- High HP & general purpose ratings up to 80A
- Extremely compact size H6.4 x W4 x D4.5 inches
- Touch Safe Construction
- Positive contact operation
- Clear position indications
- Padlockable
- Accessories Available:
Early break NO auxiliary contact
4th power pole
Solid Neutral

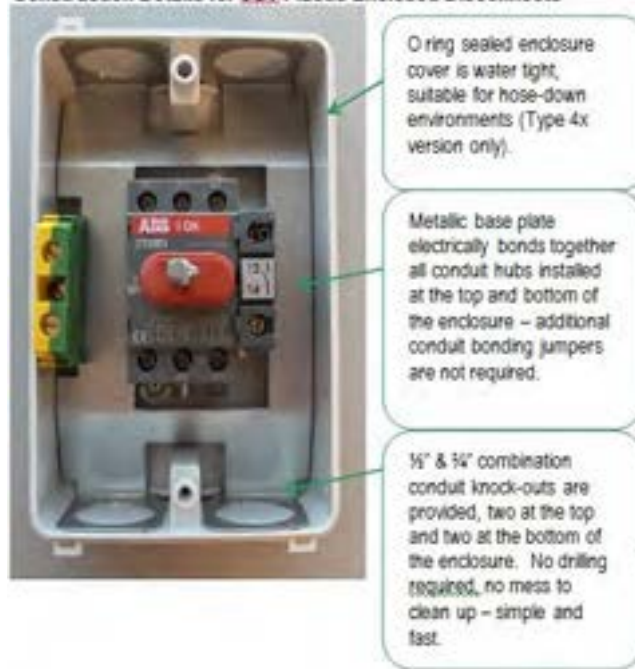
PLASTIC ENCLOSED



METAL ENCLOSED



Construction Details for eOT Plastic Enclosed Disconnects



CSA C22.2 No. 14 General Purpose Amp Rating	Max. 1 Phase HP Rating		Max. 3 Phase HP Rating			Auxiliary Con- tacts	Catalogue Number
	120V	240V	240V	480V	600V		
Plastic Enclosure Type 3R, 12							
20	1	2	5	10	10	-	EOT16U3P3-S
20	1	2	5	10	10	1 NO	EOT16U3P3-1S
40	2	5	10	20	25	-	EOT32U3P3-S
40	2	5	10	20	25	1 NO	EOT32U3P3-1S
60	2	7.5	15	30	30	-	EOT45U3P3-S
60	2	7.5	15	30	30	1 NO	EOT45U3P3-1S
Plastic Enclosure Type 4, 4X, 12							
20	1	2	5	10	10	-	EOT16U3P4-P
20	1	2	5	10	10	1 NO	EOT16U3P4-1P
40	2	5	10	20	25	-	EOT32U3P4-P
40	2	5	10	20	25	1 NO	EOT32U3P4-1P
60	2	7.5	15	30	30	-	EOT45U3P4-P
60	2	7.5	15	30	30	1 NO	EOT45U3P4-1P
80	2	10	20	40	40	-	EOT63U3P4-P
80	2	10	20	40	40	1 NO	EOT63U3P4-1P
Metal Enclosure Type 1							
20	1	2	5	10	10	-	EOT16U3M1-P
20	1	2	5	10	10	-	EOT16U3M1-S
40	2	5	10	20	25	-	EOT32U3M1-P
40	2	5	10	20	25	-	EOT32U3M1-S
60	2	7.5	15	30	30	-	EOT45U3M1-P
60	2	7.5	15	30	30	-	EOT45U3M1-S
80	2	10	20	40	40	-	EOT63U3M1-P
80	2	10	20	40	40	-	EOT63U3M1-S

ENCLOSED MANUAL MOTOR CONTROLLERS—CSA 22.2 NO.14

SUITABLE AS MOTOR DISCONNECTS FOR ROOF TOP UNITS AND OTHER MOTOR APPLICATIONS

CSA C22.2 No. 14 General Purpose Amp Rating	Max. 1 Phase HP Rating		Max. 3 Phase HP Rating			Auxiliary Contacts	Catalogue Number
	120V	240V	240V	480V	600V		
Metal Enclosure Type 3R, 12							
20	1	2	5	10	10	-	EOT16U3M3-P
20	1	2	5	10	10	-	EOT16U3M3-S
40	2	5	10	20	25	-	EOT32U3M3-P
40	2	5	10	20	25	-	EOT32U3M3-S
60	2	7.5	15	30	30	-	EOT45U3M3-P
60	2	7.5	15	30	30	-	EOT45U3M3-S
80	2	10	20	40	40	-	EOT63U3M3-P
80	2	10	20	40	40	-	EOT63U3M3-S
Stainless Steel Enclosure Type 4, 4X							
20	1	2	5	10	10	-	EOT16U3S4-P
20	1	2	5	10	10	-	EOT16U3S4-M
40	2	5	10	20	25	-	EOT32U3S4-P
40	2	5	10	20	25	-	EOT32U3S4-M
60	2	7.5	15	30	30	-	EOT45U3S4-P
60	2	7.5	15	30	30	-	EOT45U3S4-M
80	2	10	20	40	40	-	EOT63U3S4-P
80	2	10	20	40	40	-	EOT63U3S4-M

ENCLOSED NON-FUSIBLE DISCONNECT SWITCHES—CSA 22.2 NO.4

CSA C22.2 No. 4 General Purpose Amp Rating	Max. 1 Phase HP Rating		Max. 3 Phase HP Rating			Auxiliary Contacts	Catalogue Number
	120V	240V	240V	480V	600V		
Metal Enclosure Type 1							
30	2	5	10	20	30	-	EOT30U3M1-P
30	2	5	10	20	30	-	EOT30U3M1-S
60	3	7.5	20	40	40	-	EOT60U3M1-P
60	3	7.5	20	40	40	-	EOT60U3M1-S
100	5	15	30	50	50	-	EOT100U3M1-P
100	5	15	30	50	50	-	EOT100U3M1-S
Metal Enclosure Type 3R, 12							
30	2	5	10	20	30	-	EOT30U3M3-P
60	3	7.5	20	40	40	-	EOT60U3M3-P
100	5	15	30	50	50	-	EOT100U3M3-P
Stainless Steel Enclosure Type 4, 4X							
30	2	5	10	20	30	-	EOT30U3S4-P
60	3	7.5	20	40	40	-	EOT60U3S4-P
100	5	15	30	50	50	-	EOT100U3S4-P
30	2	5	10	20	30	-	EOT30U3S4-M
60	3	7.5	20	40	40	-	EOT60U3S4-M
100	5	15	30	50	50	-	EOT100U3S4-M

Handles Available:

S: Selector

P: Plastic Pistol

M: SS Pistol

POWERLINE FUSIBLE DISCONNECT SWITCHES

Features:

- Complies with CSA 22.2 No. 4 & UL 98 requirements
- Broad range and compact space saving design
- Positive opening operation and welded contact protection
- Door interlock and padlockable handles with defeater mechanism
- Wide range of accessories

FUSIBLE DISCONNECT SWITCH KITS (Including Fusible Disconnect, Handle & Shaft)

CSA General	CSA Fuse Type***	Max. 3 Phase HP Rating					Fusible Disconnect Switch Kits Part Number
		200V	208V	240V	480V	600V	
30A – 400A, 3 Pole 600V Fusible Disconnects							
30	J	5	7.5	7.5	15	20	OS30FAJ12P
60		15	15	15	30	50	OS60GJ12P
100		25	25	30	60	75	OS100GJ12P
200		50	50	60	125	150	OS200J03P
400		100	125	125	250	350	OS400J03P

Description of handles, shafts included in kits:

- 1) Handles are all NEMA Type 1, 3R, 12 Pistol type with markings O/I and ON/OFF
- 2) Shaft lengths for 30A/60A/100A: 150mm/6"; 200A/400A: 210mm/8.3"

***Fuses not included, please order appropriate 'J' type fuses

ACCESSORIES—HANDLES, SHAFTS, AUXILIARY CONTACTS & TERMINAL LUGS

HANDLES

NEMA	Type	Marking	For Fusible Disconnect Type	Part Number
1, 3R, 12	Pistol	O/I & ON/OFF	OS30...	OHB65J6
1	Direct Mount*	O/I / TEST	OS30...	OHB55
1, 3R, 12	Pistol	O/I & ON/OFF	OS60...OS200	OHB65J6
1, 3R, 12	Pistol	O/I & ON/OFF	OS400...OS800	OHB145J12

Note: Other handles available.

*No shaft necessary and it can be padlocked

LONG SHAFTS

Shaft Size mm	Shaft Length inches/mm	For Fusible Disconnects	Part Number
6x6	11.6" / 290	OS30...OS200	OSP6X290
6x6	14.4" / 360	OS30...OS200	OSP6X360
12x12	13" / 325	OS400	OSP12X325

Note: Longer shafts available.

Shafts can be cut to length.

AUXILIARY CONTACTS

Description	AC Thermal Rating	AC Rated Voltage	For Fusible Disconnects	Part Number
1 NO	10A	600V	OS30** – OS200	OA1G10
1 NC				OA3G01
Mounting base for OA1G10 & OA3G01 (on the left side)			OS30...	OSZ4**

** Mounting base OSZ4 required for mounting auxiliary contacts on an OS30 (30A) fusible disconnect only.

TERMINAL LUG KIT

For use on	Wire Size	Wire Type	Terminal Lugs Per Kit	Part Number
OS100GJ	#14 – 2/0	Cu/Al	6	OZXA-24
OS200J	#4 – 300			OZXA-200
OS400J	#2 – 600 kcmil			OZXA-400

Note: 30A and 60A fusible disconnects include terminal lugs.

SWITCHLINE NON-FUSIBLE DISCONNECT SWITCHES

Features:

- Complies with CSA 22.2 No.4 & CSA 22.2 No.14 requirements
- Positive opening operation, welded contact protection and padlockable handles with defeater mechanism
- Compact space saving design with a wide range of accessories

NON-FUSIBLE DISCONNECT SWITCH KITS (Including Non-fusible Disconnect, Handle, Shaft)



CSA General Purpose Amp	Max. 1 Phase HP Rating		Max. 3 Phase HP Rating				Disconnect Part Number
	120V	240V	200/208V	240/277V	480V	600V	Base/DIN Rail Mount
FOR BRANCH CIRCUIT APPLICATIONS AS PER CSA 22.2.14							
20	1	2	3	5	10	10	OT16F3S
30	1.5	3	7.5	7.5	15	20	OT25F3S
40	2	5	10	10	20	25	OT40F3P
60	2	7.5	15	15	30	30	OT63F3P
80	2	10	20	20	40	40	OT80F3P

Description of handles, shafts included in kits:

- 1) Handles for 20A/30A disconnects are selector type and 40A/60A/80A disconnects are pistol type. All handles are NEMA Type 1, 3R, 12 pistol type with markings O/I, ON/OFF.
- 2) Shaft lengths for 20A/30A: 180mm/7.2", 40A/60A/80A: 170mm/6.8".



FOR FEEDER CIRCUIT APPLICATIONS AS PER CSA 22.2.4							
30	2	5	10	10	20	30	OT30F3P
60	3	7.5	20	20	40	40	OT60F3P
100	5	15	25	30	50	50	OT100F3P
100	7.5	20	30	40	75	100	OT160E3P
200	-	40	60	75	150	200	OT200U03P

Note: Terminal lugs are integral except for OT200U03P. Lugs for OT200U03P is OZXA-200 (set of 6)

Description of handles, shafts included in kits:

- 1) Handles for 30A/60A/100A/125A/200A disconnects are pistol type. All handles are NEMA Type 1, 3R, 12 Pistol type with markings O/I, ON/OFF.
- 2) Shaft lengths for 30A/60A/100A: 170mm/6.8", 125A/200A: 210mm/8.27".

ACCESSORIES—HANDLES, SHAFTS, AUXILIARY

HANDLES



NEMA Type	Type	Marking	For Disconnect Type	Part Number
1, 3R, 12	Selector	O/I & ON/OFF	OT16...OT100F3	OHBS2AJ
	Pistol		OT16...OT100F3 / OT160E3	OHB65J6
	Pistol		OT160E3 / OT200U03	OHB80J6
Shaft alignment ring		OH_45, 65, 80, 125, 145, 175, J, L		OHZX10

LONG SHAFT



Shaft Size mm	Shaft Length inches/mm	For Disconnects	Part Number
6x6	10.5" / 265	OT16F3...OT200U03	OX6X265
	14.4" / 360	OT16F3...OT200U03	OX6X360
6x6 (For selector handle)	10.0" / 250	OT16F3...OT100F3	OX6X240

Note: Other sizes available.

Shafts can be cut to lengths

AUXILIARY CONTACTS

Description	AC Thermal Rating	AC Rated Voltage	For Disconnect Type	Part Number
1 NO mounts on right hand side of switch (2 max.)	10A	600V	OT16F3 -	OA1G10
1 NC mounts on left hand side of switch (2 max.)			OT100F3	OA1G01
1 NO + 1 NC mounts on right or left hand side of switch (2 max. per side)	10A	600V	OT16F3 -	OA2G11
			OT100F3	

SWITCHLINE NON-FUSIBLE DISCONNECT SWITCHES

DOOR MOUNTED, NON-FUSIBLE DISCONNECT SWITCH KITS (Including Non-Fusible Disconnect, Handle)



CSA General Purpose Amp	Max. 1 Phase HP Rating		Max. 3 Phase HP Rating				Door Mount Disconnect Part Number
	120V	240V	200/208V	240/277V	480V	600V	
FOR BRANCH CIRCUIT APPLICATIONS AS PER CSA 22.2.14							
40	2	5	10	10	20	25	OT40FT3S
60	2	7.5	15	15	30	30	OT63FT3S
80	2	10	20	20	40	40	OT80FT3S

Description of handles included in kits: Handles are selector type NEMA Type 1, 3R, 12 with markings O/I, ON/OFF.

Note:

- 1) OT40FT3S disconnect switches are Snap-on mounting. OT63FT3S and OT80FT3S disconnect switches are screw mounting.
- 2) Terminal lugs for the above disconnects are integral.

NON—FUSIBLE SIX POLE AND TRANSFER SWITCHES

Features:

- Complies with CSA 22.2 No. 4 & CSA 22.2 No.14 requirements
- Positive opening construction with mechanically operated contacts
- Padlockable handles with defeater mechanism
- Compact space saving design with a wide range of accessories

6 POLE SWITCHES AND 3 POLE TRANSFER SWITCHES



CSA General Purpose Amp	Max. 1 Phase HP Rating		Max. 3 Phase HP Rating				Disconnect Part Number	
	120V	240V	200V	240V	480V	600V	6 Pole Switches	3 Pole Transfer Switches
For Branch Circuit Applications as per CSA 22.2.14								
20	1	2	3	5	10	10	OT16F6	OT16F3C
30	1.5	3	7.5	7.5	15	20	OT25F6	OT25F3C
40	2	5	10	10	20	25	OT40F6	OT40F3C
60	2	7.5	15	15	30	30	OT63F6	OT63F3C
80	2	10	20	20	40	40	OT80F6	OT80F3C
For Feeder Circuit Applications as per CSA 22.2.4								
30	2	5	10	10	20	30	OT30F6	OT30F3C
60	3	7.5	20	20	40	40	OT60F6	OT60F3C
100	5	15	25	30	50	50	OT100F6	OT100F3C

Terminal lugs for the above disconnects are integral

ACCESSORIES – HANDLES, SHAFTS

HANDLES



NEMA Type	Type	Marking	For Disconnect Type	Part Number
1, 3R, 12	Pistol	I – O – II	OT16F3...OT100F3	OHB65J6E011
		O/I & ON/OFF	OT16F6...OT100F6	OHB65J6

Note: Other handles available.

LONG SHAFT



Shaft Size mm	Shaft Length inches/mm	For Disconnects	Part Number
6x6	10.5" / 265	OT16F3...OT100F3	EXP6X265
	16" / 400		EXP6X400

Note: Other shafts available.

Shafts can be cut to length.

FLANGE MOUNTED CABLE OPERATED DISCONNECT SWITCHES FUSIBLE & NON FUSIBLE

Features:

- Complies with CSA 22.2 No. 4 & UL 98 requirements
- Flange handles available for fusible disconnects up to 800A and non-fusible up to 1200A



CABLE OPERATED FUSIBLE DISCONNECT SWITCHES (Fuses not included, order appropriate 'CC' or 'J' type fuses*)						
CSA General Purpose Amps	CSA Fuse Type*	Max. 3 Phase HP Rating				Part Number
		200-208V	240V	480V	600V	
30A – 200A, 3 Pole 600V Fusible Disconnects						
30	CC	5/7.5	7.5	15	20	OS30FACC12
30	J	5/7.5	7.5	15	20	OS30FAJ12
60	J	15	15	30	50	OS60GJ12
100	J	25	30	60	75	OS100GJ30
200	J	50	60	125	150	OS200J30



CABLE OPERATED NON-FUSIBLE DISCONNECT SWITCHES						
CSA General Purpose Amps	Max. 3 Phase HP Rating					Part Number
	200V	208V	240V	480V	600V	
30 – 200A, 3 Pole 600V Non-Fusible Disconnects						
30	10	10	10	20	30	OT30F3
60	20	20	20	40	40	OT60F3
100	25	25	30	50	50	OT100F3
125	30	30	40	75	100	OT160E3
200	60	60	75	150	200	OT200U30

ACCESSORIES—FLANGE HANDLE, CABLE & TERMINAL LUGS



FLANGE HANDLE		
For Use With	NEMA Type	Part Number
OT30-OT200U30 / OS30-OS200J30	1, 3R, 12	OHF1C12
	1, 3R, 4, 4X, 12	OHF1C4



OPERATING MECHANISM	
For Use With	Part Number
OT30-OT100	MKCS1
OT160/OS60GJ12	MKCS3
OT200/OS100GJ30/OS200J30	MKCS4
OS30FAJ12, OS30FACC12	MKCS2



CABLE		
For Use With	Cable Length (Inches)	Part Number
OS30-OS200J30 OT30-OT200U30	36	OXC1L36
	48	OXC1L48
	60	OXC1L60
	72	OXC1L72
	84	OXC1L84
	96	OXC1L96
	108	OXC1L108



TERMINAL LUG KIT				
For Use On	Wire Size	Wire Type	Terminal Lugs Per Kit	Part Number
OS30	#18 – 8/0	Cu	-	Integral
OT30/OT60/OS60GJ03	#14 – 4			
OT100/OT160	#8 – 1/0			
OS100GJ30-OS200J30/OT200U30	#4 – 300 kcmil	Cu/Al	6	OZXA-200

ELECTRONIC PRODUCTS AND RELAYS

<u>POWER SUPPLIES:</u> 	• CP-D: Output: 12V, 24V DC (adjustable for range type > 10W) (0.42/0.83/1,3/2.1/2.5/4.2 A) Input: 1Ph AC or DC • CP-E: Output: 5V,12V,24V,48V DC (adjustable) (0.625/0.75/1.25/2.5/3/5/10/20A) Input: 1Ph AC or DC • CP-T: Output: 24V,48V DC (adjustable) (5/10/20/40A) Input: 3Ph or 2Ph AC; or DC
<u>ELECTRONIC TIMERS:</u> 	• On-delay, Off-delay, On- and Off-delay, Impulse-on, Impulse-off, Impulse-on and off, Flasher-on, Flasher-off, Pulse generator with on or off, Pulse former, Star-delta change-over, Switching relay And more • 1 or 2 c/o contacts or solid-state outputs • LEDs for status indication • Wide time range, control supply voltage, control inputs
<u>MEASURING and MONITORING RELAYS:</u> 	• Current and voltage monitors, single-phase • Three-phase monitors • Insulation monitors for ungrounded supply mains • Thermistor motor protection relays • Temperature monitors • Liquid level monitors and controls • Contact protection relays and sensor interface relays • Cycle monitor with watchdog function

<u>MOTOR MONITORS and INSULATION MONITORS:</u>	
	Insulation monitors for ungrounded supply mains Motor load monitors Motor control and protection Thermistor motor protection relays
<u>ANALOG SIGNAL CONVERTERS and SIGNAL DATA CONVERTERS:</u>	
	Current /current isolator Analog standard signal converter Temperature signal converter for RTD sensors Temperature signal converter for thermocouples Serial data converters
<u>PLUGGABLE INTERFACE RELAYS and OPTOCOUPPLERS:</u>	
	PCB, Miniature or Universal (Cube) Relays Wide coil voltage range 1 c/o, 2 c/o, 3 c/o or 4c/o contacts available LED indication Integrated test button for manual actuation Pluggable function modules: - Reverse polarity protection / Freewheeling diode - LED Indication - RC Elements - Overvoltage protection - Multifunction time module

PLUGGABLE INTERFACE RELAYS

Features:

- PCB, Miniature or Universal Relays
- Wide Coil range
- 1 c/o, 2 c/o, 3 c/o or 4c/o contacts available
- Integrated test button for manual actuation

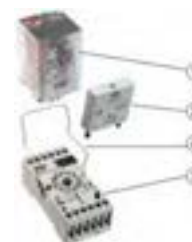
Type	Description	Order code
Pluggable Miniature Relays CR-M with LED		
2 changeover contacts (Double Pole Double Throw): 250 V, 12 A		
CR-M024AC2L	24VAC, 2 changeover, 250V/12A, LED	1SVR405611R0100
CR-M024DC2L	24VDC, 2 changeover, 250V/12A, LED	1SVR405611R1100
CR-M120AC2L	120VAC, 2 changeover, 250V/12A, LED	1SVR405611R2100
4 changeover contacts (Four Pole Double Throw): 250 V, 6 A		
CR-M024AC4L	24VAC, 4 changeover, 250V/6A, LED	1SVR405613R0100
CR-M024DC4L	24VDC, 4 changeover, 250V/6A, LED	1SVR405613R1100
CR-M120AC4L	120VAC, 4 changeover, 250V/6A, LED	1SVR405613R2100
Accessories		
CR-M4SS	Socket for 2 or 4 changeover CR-M relay	1SVR405651R3000
CR-MH	Plastic holder for CR-M	1SVR405659R1000
CR-MH1	Metal holder for CR-M	1SVR405659R1100
Pluggable Universal Relays CR-U with LED		
2 changeover contacts (Double Pole Double Throw / 8 Pin): 250 V, 10 A		
CR-U024AC2L	24VAC, 2 changeover, 250V/10A, LED	1SVR405621R0100
CR-U024DC2L	24VDC, 2 changeover, 250V/10A, LED	1SVR405621R1100
CR-U120AC2L	120VAC, 2 changeover, 250V/10A, LED	1SVR405621R2100
CR-U230AC2L	230VAC, 2 changeover, 250V/10A, LED	1SVR405621R3100
3 changeover contacts (Triple Pole Double Throw / 11 Pin): 250 V, 10 A		
CR-U024AC3L	24VAC, 3 changeover, 250V/10A, LED	1SVR405622R0100
CR-U024DC3L	24VDC, 3 changeover, 250V/10A, LED	1SVR405622R1100
CR-U120AC3L	120VAC, 3 changeover, 250V/10A, LED	1SVR405622R2100
Accessories		
CR-U2S	Socket for 2 changeover CR-U relay	1SVR405670R0000
CR-U3S	Socket for 3 changeover CR-U relay	1SVR405660R0000
CR-UH	Holder for CR-U	1SVR405669R0000
Pluggable PCB Relays CR-P		
1 changeover contact (Single Pole Double Throw): 250 V, 16 A		
CR-P024AC1	24VAC, 1 changeover, 250V/16A	1SVR405600R0000
CR-P024DC1	24VDC, 1 changeover, 250V/16A	1SVR405600R1000
CR-P120AC1	120VAC, 1 changeover, 250V/16A	1SVR405600R2000
2 changeover contacts (Double Pole Double Throw): 250 V, 8 A		
CR-P024AC2	24VAC, 2 changeover, 250V/8A	1SVR405601R0000
CR-P024DC2	24VDC, 2 changeover, 250V/8A	1SVR405601R1000
CR-P120AC2	120VAC, 2 changeover, 250V/8A	1SVR405601R2000
Accessories		
CR-PSS	Socket for 1 or 2 changeover CR-P relay	1SVR405650R1000
CR-PLS	Logical socket with protective separation	1SVR405650R0000
CR-PH	Plastic holder for socket	1SVR405659R0000

* Other coil voltages available upon request



CR-M

1. Interface relay
2. Pluggable function module
3. Socket
4. Holder
5. Marker



CR-U

1. Interface relay
2. Pluggable function module
3. Socket
4. Holder



CR-P

1. Interface relay
2. Pluggable function module
3. Socket
4. Holder
5. Marker

SWITCH-MODE POWER SUPPLIES

Features:

- Output voltages available: 5 V, 12 V, 24 V, 48 V DC
- Adjustable output voltages
- High efficiency of up to 90 %
- Low power dissipation and low heating
- Free convection cooling (no forced cooling with ventilators)
- Ambient temperature range during operation -40...+70 °C
- Open-circuit, overload and short-circuit stable
- Integrated input fuse
- LED(s) for status indication
- Signaling output/contact for output voltage OK



Type	Input Voltage	Rated Output	Order Code
CP-E 12/2.5	85-264VAC / 90-375VDC	12 V DC / 2.5A	1SVR427032R1000
CP-E 12/10.0	90-132 V AC, 180-264 V AC / 210-375 V DC	12 V DC / 10 A	1SVR427035R1000
CP-E 24/5.0	90-132 V AC, 180-264 V AC / 210-375 V DC	24 V DC / 5 A	1SVR427034R0000
CP-E 24/10.0	90-132 V AC, 180-264 V AC / 210-375 V DC	24 V DC / 10 A	1SVR427035R0000
CP-E 24/20.0	90-264 V AC / 120-375 V DC	24 V DC / 20 A	1SVR427036R0000
CP-T 24/10.0	400-500V AC / 480 – 820 V DC	24 V DC / 10 A	1SVR427055R0000
CP-T 24/20.0	400-500V AC / 480 – 820 V DC	24 V DC / 20 A	1SVR427056R0000
CP-T 24/40.0	400-500V AC / 480 – 820 V DC	24 V DC / 40 A	1SVR427057R0000

INTERFACE RELAYS & OPTOCOUPLERS

Features:

- Space saving design Width 6.2mm
- Vibration resistant
- High switching current on small footprint



CR-S Slim Relay			
Type	Control voltage	Contacts	Part Number
CR-S024VADC1CRS	24VAC/DC	1 c/o 6A	1SVR405541R3110
CR-S110VADC1CRS	110VAC/DC	1 c/o 6A	1SVR405541R6110
CR-S230VADC1CRS	230VAC/DC	1 c/o 6A	1SVR405541R7110
R600 Boxed Slim Relay and Optocouplers			
Type	Control Voltage	Contacts	Part Number
RB121-24VUC	24VAC/DC	1 c/o 6A	1SNA645001R0300
RB121-115VUC	115VAC/DC	1 c/o 6A	1SNA645003R0500
OBIC0100-24VDC	Input: 24VDC	Transistor Output: 100mA 58VDC	1SNA645021R2600
ONIC0100-115-230VUC	Input: 115-230VAC/DC	Transistor Output: 100mA 58VDC	1SNA645022R2700
OBOC2000-24VDC	Input: 24VDC	MOS-FET Output: 2A 58VDC	1SNA645051R0400

MULTIFUNCTION TIMERS

Features:

- Single and Multifunction Timers
- LEDs for status indication
- Direct reading scales



CT-D Timers*				
Type	Control voltage	Time ranges	Output	Part Number
CT-MFD12	24-240 V AC 24-48 V DC	7 (0.05 s—100 h)	1 c/o	1SVR500020R0000
CT-MFD21	12-240 V AC/DC		2 c/o	1SVR500020R1100

Note: Other types of timers are also available.

SINGLE PHASE MONITORING RELAYS

Features:

- Monitoring of DC and AC currents: 3 mA to 15 A
- Monitoring of DC and AC voltages from 3 - 600 V
- 3 LEDs for the indication of operational states



CM-SRS (Current Monitoring)				
Type	Control voltage	Measuring ranges	Output	Part Number
CM-SRS.M2S	24-240 V AC/DC	0.3-1.5 A 1-5 A 3-15 A	2 c/o	1SVR730840R0700
CM-SRS.22S	110-130 V AC		2 c/o	1SVR730841R0500

Note: Other type of current monitoring devices are also available.



CM-ESS (Voltage Monitoring)				
Type	Control voltage	Measuring ranges	Output	Part Number
CM-ESS.MS	24-240 V AC/DC	3-30 V 6-60 V 30-300 V 60-600 V	2 c/o	1SVR730830R0500
CM-ESS.2S	110-130 V AC		2 c/o	1SVR730831R0400

Note: Other type of current voltage monitoring devices are also available.

THREE PHASE MONITORING RELAYS

Features:

- Over and undervoltage monitoring (fixed or adjustable)
- Phase unbalance monitoring
- Wide-range operating voltage



CM-MPN (Voltage Monitoring)				
Type	Supply voltage	Measuring ranges	Output	Part Number
CM-MPN.52S	3x350-580 V AC	3x350-580 V AC	2 c/o	1SVR750487R8300
CM-MPN.62S	3x450-720 V AC	3x450-720 V AC	2 c/o	1SVR750488R8300

CURRENT TRANSFORMERS

Features:

- Without primary conductor though with foot angle, insulating protective cap and bar fastening screws
- Primary / rated current from 50 A to 600 A
- Secondary current of 1 A or 5 A
- Class 1



Plug-in current transformers CM-CT				
Rated primary current	Secondary current	Burden class	Type	Order code
50 75 100 150 200 300 400 500 600	1A	1 VA / 1	CM-CT 50/1	1SVR450116R1000
		1.5 VA / 1	CM-CT 75/1	1SVR450116R1100
		2.5 VA / 1	CM-CT 100/1	1SVR450116R1200
		2.5 VA / 1	CM-CT 150/1	1SVR450116R1300
		2.5 VA / 1	CM-CT 200/1	1SVR450116R1400
		5 VA / 1	CM-CT 300/1	1SVR450117R1100
		5 VA / 1	CM-CT 400/1	1SVR450117R1200
		5 VA / 1	CM-CT 500/1	1SVR450117R1300
		5 VA / 1	CM-CT 600/1	1SVR450117R1400
		5 VA / 1	CM-CT 600/1	1SVR450117R1400
50 75 100 150 200 300 400 500 600	5A	1 VA / 1	CM-CT 50/5	1SVR450116R5000
		1.5 VA / 1	CM-CT 75/5	1SVR450116R5100
		2.5 VA / 1	CM-CT 100/5	1SVR450116R5200
		2.5 VA / 1	CM-CT 150/5	1SVR450116R5300
		2.5 VA / 1	CM-CT 200/5	1SVR450116R5400
		5 VA / 1	CM-CT 300/5	1SVR450117R5100
		5 VA / 1	CM-CT 400/5	1SVR450117R5200
		5 VA / 1	CM-CT 500/5	1SVR450117R5300
		5 VA / 1	CM-CT 600/5	1SVR450117R5400
		5 VA / 1	CM-CT 600/5	1SVR450117R5400



Accessories		
Description	Type	Order Code
Snap-on fastener for DIN rail mounting of CM-CT	CM-CT A	1SVR450118R1000



High Performance

Fast acting protective mechanism provides current limiting protection in the event of a short circuit. Low energy let-through.

Wide Range

ABB provides breakers from fractional amperage to 63 amps in multiple trip characteristics and accessories including bus bars, auxiliary contacts, bell alarm contacts, shunt trips and undervoltage releases.

Compact

Components are small allowing you to downsize your equipment by saving in control cabinets. Both product groups the MCBs as well as Miniature MCCBs are designed in the 17.5mm housing.

Dual Function Terminals

Units have two terminal lug openings per side each will accept cable or bus bar. Openings are simultaneously tightened by a single terminal screw. Safe terminal technology prevents cable from being connected incorrectly.

International Approvals

All components including the new miniature molded case circuit breakers meet all major international standards, including CSA and UL.

SYSTEM PRO M COMPACT SU200M SERIES—BRANCH PROTECTORS AND MINIATURE MCCBS

Features:

- Branch Protectors available in C, K & Z curves with 10kA maximum interrupting.
- 1, 2, 3 & 4 pole versions available in branch circuit miniature MCCBs.
- Many accessories available.
- Miniature MCCBs are designed with current limiting technology.



Rated Current	Trip- ping Char.*	Inter- rupting Capacity	480Y/277VAC Part Number			
			1 Pole	2 Pole	3 Pole	4 Pole
0.5	C	10 KA	SU201M-C0.5	SU202M-C0.5	SU203M-C0.5	SU204M-C0.5
1			SU201M-C1	SU202M-C1	SU203M-C1	SU204M-C1
1.6			SU201M-C1.6	SU202M-C1.6	SU203M-C1.6	SU204M-C1.6
2			SU201M-C2	SU202M-C2	SU203M-C2	SU204M-C2
3			SU201M-C3	SU202M-C3	SU203M-C3	SU204M-C3
4			SU201M-C4	SU202M-C4	SU203M-C4	SU204M-C4
5			SU201M-C5	SU202M-C5	SU203M-C5	SU204M-C5
6			SU201M-C6	SU202M-C6	SU203M-C6	SU204M-C6
8			SU201M-C8	SU202M-C8	SU203M-C8	SU204M-C8
10			SU201M-C10	SU202M-C10	SU203M-C10	SU204M-C10
13			SU201M-C13	SU202M-C13	SU203M-C13	SU204M-C13
15			SU201M-C15	SU202M-C15	SU203M-C15	SU204M-C15
16			SU201M-C16	SU202M-C16	SU203M-C16	SU204M-C16
20			SU201M-C20	SU202M-C20	SU203M-C20	SU204M-C20
25			SU201M-C25	SU202M-C25	SU203M-C25	SU204M-C25
30			SU201M-C30	SU202M-C30	SU203M-C30	SU204M-C30
32			SU201M-C32	SU202M-C32	SU203M-C32	SU204M-C32
40			SU201M-C40	SU202M-C40	SU203M-C40	SU204M-C40
50			SU201M-C50	SU202M-C50	SU203M-C50	SU204M-C50
60			SU201M-C60	SU202M-C60	SU203M-C60	SU204M-C60
63			SU201M-C63	SU202M-C63	SU203M-C63	SU204M-C63

* **Note:** C curve is for medium magnetic start-up currents, cable and equipment protection and with 5-10 X magnetic and 1.25X thermal characteristics. Also available K curve for high magnetic start-up currents with 8-12 X magnetic and 1.25 X thermal characteristics. Z curve available for low short circuit trip setting with 2-3 X magnetic and 1.25X thermal characteristics.

SYSTEM PRO M COMPACT SU200M SERIES—ACCESSORIES

Contact Type	Mounting Side	Part Number
1 form C	Right Side	S2C-H6RU
1 BA	Right Side	S2C-S6RU

SYSTEM PRO M COMPACT ST200M SERIES—SUPPLEMENTARY PROTECTORS AND MINIATURE

Features:

- Supplementary Protectors available in B, C, D, K, & Z curves with 10kA maximum interrupting.
- 1, 2, 3 & 4 pole versions available in branch circuit miniature MCCBs.
- Many accessories available.
- Miniature MCCBs are designed with current limiting technology.



Rated Current	Trip- ping Char.*	Inter- rupting Capacity	480Y/277VAC Part Number			
			1 Pole	2 Pole	3 Pole	4 Pole
0.5	C	10 KA	ST201M-C0.5	ST202M-C0.5	ST203M-C0.5	ST204M-C0.5
1			ST201M-C1	ST202M-C1	ST203M-C1	ST204M-C1
1.6			ST201M-C1.6	ST202M-C1.6	ST203M-C1.6	ST204M-C1.6
2			ST201M-C2	ST202M-C2	ST203M-C2	ST204M-C2
3			ST201M-C3	ST202M-C3	ST203M-C3	ST204M-C3
4			ST201M-C4	ST202M-C4	ST203M-C4	ST204M-C4
5			ST201M-C5	ST202M-C5	ST203M-C5	ST204M-C5
6			ST201M-C6	ST202M-C6	ST203M-C6	ST204M-C6
8			ST201M-C8	ST202M-C8	ST203M-C8	ST204M-C8
10			ST201M-C10	ST202M-C10	ST203M-C10	ST204M-C10
13			ST201M-C13	ST202M-C13	ST203M-C13	ST204M-C13
15			ST201M-C15	ST202M-C15	ST203M-C15	ST204M-C15
16			ST201M-C16	ST202M-C16	ST203M-C16	ST204M-C16
20			ST201M-C20	ST202M-C20	ST203M-C20	ST204M-C20
25			ST201M-C25	ST202M-C25	ST203M-C25	ST204M-C25
30			ST201M-C30	ST202M-C30	ST203M-C30	ST204M-C30
32			ST201M-C32	ST202M-C32	ST203M-C32	ST204M-C32
40			ST201M-C40	ST202M-C40	ST203M-C40	ST204M-C40
50			ST201M-C50	ST202M-C50	ST203M-C50	ST204M-C50
60			ST201M-C60	ST202M-C60	ST203M-C60	ST204M-C60
63			ST201M-C63	ST202M-C63	ST203M-C63	ST204M-C63

* **Note:** C curve is for medium magnetic start-up currents, cable and equipment protection and with 5-10 X magnetic and 1.25X thermal characteristics. Also available K curve for high magnetic start-up currents with 8-12 X magnetic and 1.25 X thermal characteristics. Z curve available for low short circuit trip setting with 2-3 X magnetic and 1.25X thermal characteristics.

SYSTEM PRO M COMPACT ST200M SERIES—ACCESSORIES

Contact Type	Mounting Side	Part Number
1 form C	Right Side	S2C-H6RU
1 BA	Right Side	S2C-S6RU

T MAX XT MOLDED CASE CIRCUIT BREAKERS

Features:

- UL/CSA listed and IEC rated for global application and acceptance.
- XT 1 and XT 3 are cost effective and compact size. XT 2 and XT 4 are high performance.
- Higher interrupting ratings for size taken. 600Y/347 available on all 4 models. True 600V on XT2 and XT4
- Standard depth – XT1, & XT3 are 2.76 inches deep and XT2 & XT4 is 3.25 inches.



Rated Current	No. of Poles	UL/CSA Interrupting Capacity kA			Magnetic Trip	Part Number
		240 VAC	480 VAC	600 VAC		
XT1N MCCB, THERMAL-MAGNETIC, FIXED – THREE POLE						
15	3	50	25	18 600Y/347 Only	500A	XT1NU3015AFF000XXX
30					500A	XT1NU3030AFF000XXX
60					600A	XT1NU3060AFF000XXX
100					1000A	XT1NU3100AFF000XXX
XT2N MCCB, THERMAL-MAGNETIC, FIXED – THREE POLE						
15	3	65	25	18	400A	XT2NU3015AFF000XXX
30					400A	XT2NU3030AFF000XXX
60					600A	XT2NU3060AFF000XXX
100					1000A	XT2NU3100BFF000XXX
125					1250A	XT2NU3125BFF000XXX
XT3N MCCB, THERMAL-MAGNETIC, FIXED – THREE POLE						
125	3	50	25	10 600Y/347 Only	1250A	XT3NU3125AFF000XXX
150					1500A	XT3NU3150AFF000XXX
175					1750A	XT3NU3175AFF000XXX
200					2000A	XT3NU3200AFF000XXX
225					2250A	XT3NU3225AFF000XXX
XT4N MCCB, THERMAL-MAGNETIC, FIXED – THREE POLE						
125	3	65	25	18	1250A	XT4NU3125AFF000XXX
150					1500A	XT4NU3150AFF000XXX
175					1750A	XT4NU3175AFF000XXX
200					2000A	XT4NU3200AFF000XXX
225					2250A	XT4NU3225AFF000XXX
250					2500A	XT4NU3250AFF000XXX

ACCESSORIES



Direct rotary handle

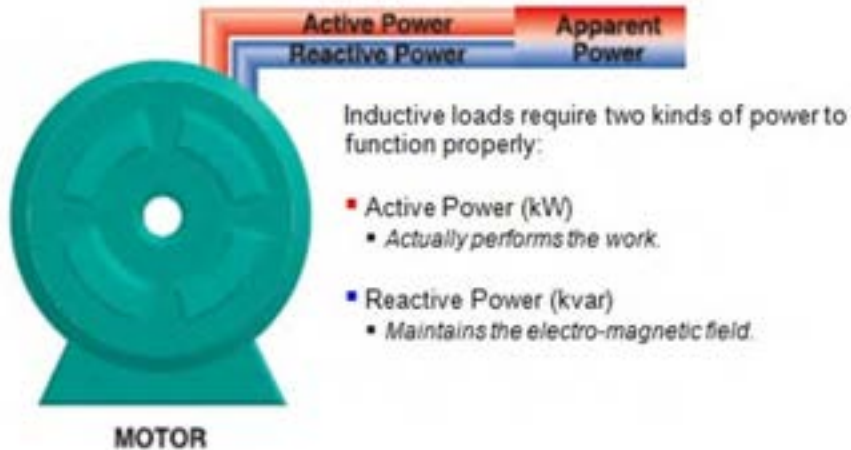


Extended rotary handle

Description	Part Number
Rotary Handle Direct Mount XT1 and XT3	KXTBRHDSTFP
Rotary Handle Extended XT1 and XT3	KXTBRHESTFP
Rotary Handle Direct Mount XT2 and XT4	KXTCRHDSTFP
Rotary Handle Extended XT2 and XT4	KXTCRHESTFP
Shunt Trip for all XT series 24-30VAC/DC	KXTASORB
Shunt Trip for all XT series 110-125VAC/DC	KXTASORD
Under voltage release for all XT series 110-125VAC/DC	KXTAUVR4
Auxiliary contact, 3 form C contacts for 3 states: Normal, Tripped, Trip unit tripping	KXTAAUX
Lug Kit 125A 14-1/0 AWG for XT1 Breakers 3PC/SKU	KXT1CU-3PC
Lug Kit 125A 14-1/0 AWG for XT2 Breakers 3PC/SKU	KXT2CU-3PC
Lug Kit 250A 10-250 AWG for XT3 Breakers 3PC/SKU	KXT3CU-3PC
Lug Kit 250A 10-250 AWG for XT4 Breakers 3PC/SKU	KXT4CU-3PC

\$\$ ENERGY SAVINGS \$\$

As the utility's capital expenditures and operating costs increase, they will be passed on to the industrial users in the form of power factor penalties and higher utility bills. ABB's Power Factor Correction Capacitors solve the problem. Not only will they save you money but they will provide the following benefits:



- Reduce heat loss of transformers and distribution equipment
- Prolong the life of distribution equipment
- Stabilize voltage levels
- Increase your system's capacity etc.



ABB also has the solution for harmonic distortion. ABB can perform an on-site power factor and harmonic analysis of your electrical network and provide you with a detailed plan to improve power factor and control/reduce harmonics.

7 questions for 7 power quality check-up

Penalties or high electrical bill	Ask for the electricity bill?
Power outages (frequent) because of tripping of protective devices (circuit breakers, fuses)	How frequently are you replacing fuses? Are your MCCBs or CB tripping without overcurrent?
"Brown" or burnt capacitors	Is the capacitor bank provided with a detuning reactor? What is the percentage of the reactor?
Overheating of cables and busbars (incl. neutral), etc.	Use of thermal camera & probes to identify hot spot. Do you have significant unbalanced loads in your system? What is the neutral current value?
Overheating of transformers and motors	Use of thermal camera & probes to identify hot spot
Failed devices and technical issues: drives, PLC, computers, UPS	How frequently are you replacing drives, electronic equipments? Does your computer screen flicker?
Humming sounds in electrical motors	Do you hear some humming sounds coming from your electrical motors?

POWER QUALITY PRODUCTS: HARMONIC FILTERS

Where do harmonics originate?

More and more electrical devices (LED/CFL lighting control, UPS, battery chargers, VFD and smart motor controllers, etc.) now include some electronic switching, which typically involves rectifying, chopping and inverting the waveform to achieve a specific output. Such switching creates harmonics and these devices are called non-linear.

Why are harmonics bad for an electrical network?

Harmonics can have significant and often unexpected effects as listed below ...

- Heating up of equipment (I^2R , skin effect)
- Overheating motors (negative torque)
- Nuisance tripping of circuit breakers and blown-fuses
- Increased risk of resonance conditions
- Inefficient operation, unnecessary downtime
- Disturbance to critical equipment (hospitals)
- Interferes with control networks
- Reduced equipment operating life
- Higher maintenance costs
- Mostly invisible until problems start



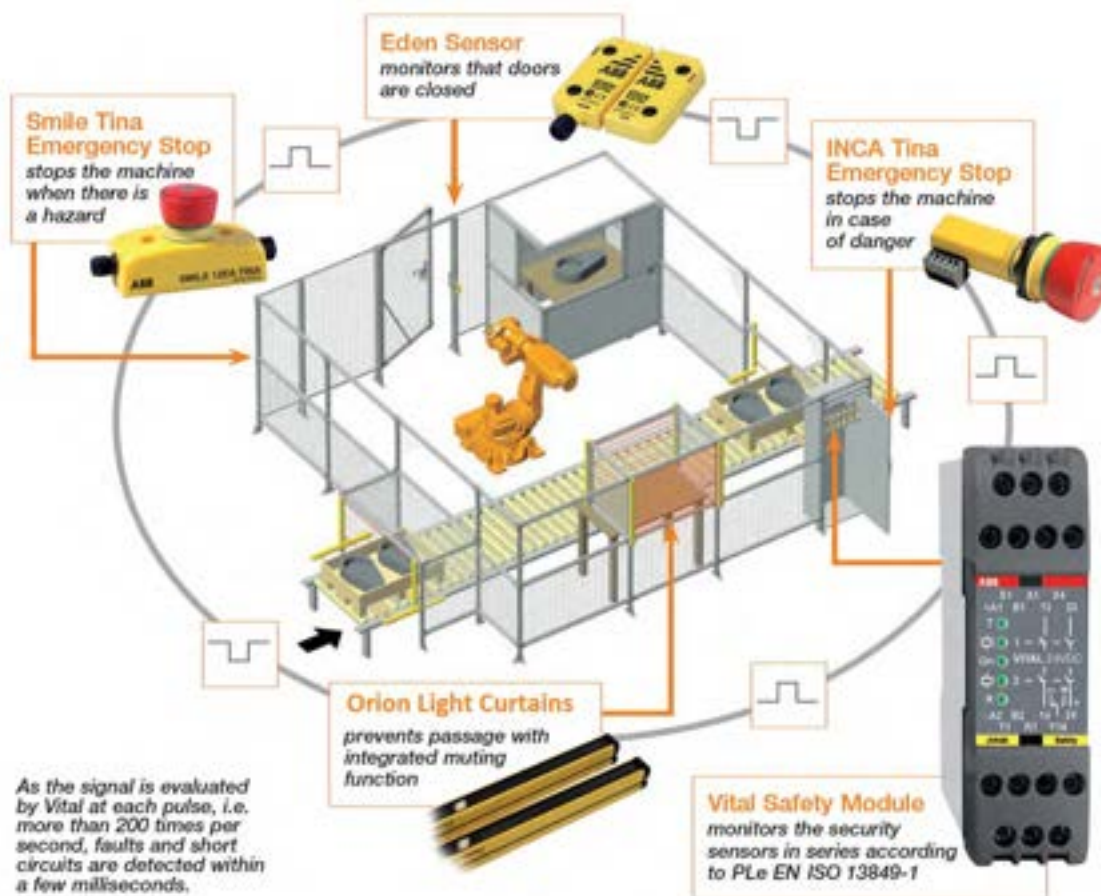
As a source of reactive power, ABB low-voltage capacitors provide significant improvement of power quality and reduction in energy costs by:

- Reducing or eliminating expensive utility penalties for low power factor
- Reducing power losses in cables and transformers
- Increasing power transmission capacity in cables
- Increasing available transformer capacity
- Improving voltage stabilization in long cables

<u>LOW VOLTAGE CAPACITORS:</u> 	• Dry type design • Very low losses • Unique sequential protection • Nema 1, 3R and 12 enclosure options • Discharge resistors included • Non – Flammable dry vermiculite filler material absorbs energy produced and extinguishes any possible flames
<u>LOW VOLTAGE CAPACITORS BANKS:</u> 	• Capacitor banks and Detuned capacitor banks (with reactors) are available as fixed, automatic or auxiliary units • Maximum KVAR size 1200kvar @ 480V / 600 V • Cable entry: top, bottom or side • Up to 12 steps configuration with slave unit • Options: Filter, fan, blown fuse indication, non-fusible or fusible disconnect and circuit breaker
<u>POWER FACTOR CONTROLLER RVT:</u> 	• Power factor correction for both balanced and unbalanced loads • Complete three phase measurements • Color Touch Screen 3.5" • Versatile communication interfaces: in addition to Ethernet 10/100BASE-T and USB2.0, the RVT supports RS485 connection as well • Real time clock • High ambient temperature rating

Gerrie Electric in partnership with ABB (Jokab Safety) can help to:

- Upgrade machine safety level, without sacrificing production
- Comply with applicable national and international machine safety standards
- Save time with reduced wiring points
- Provide consultation, engineering, design, and CAD drawings
- Provide cost effective alternative to unsafe bypassing methods
- Provide machine safety systems operational training
- Design and manufacture custom safety systems



FOR ADDITIONAL INFORMATION
PLEASE CONTACT YOUR LOCAL
GERRIE BRANCH FOR A COPY OF
OUR SEPARATE IN-STOCK SAFETY
CATALOG.

Programmable Safety Controllers (PLCs):



Safety Controllers – Vital & Tina Units:



Optical Safety Devices (Light Curtains & Stands):



Dual Channel Safety Relays:



Safety Sensors, Switches & Locks:



Safety Control Devices:



Safety E-stops and Pilot Devices:



Custom Safety Fencing Systems:



SAFETY CONTROLLER VITAL

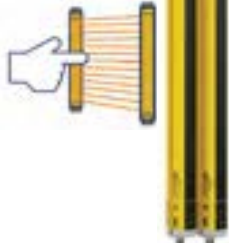
IMAGES	DESIGNATION	ARTICLE NUMBER	DESCRIPTION
Vital			
	Vital 1	2TLA020052R1000	Safety module with one single channel input for dynamic sensors. Relay outputs 2NO.

SAFETY RELAYS

NEW

IMAGES	DESIGNATION	ARTICLE NUMBER	DESCRIPTION
Safety Relay – Sentry Series 22.5mm Width			
	SSR10 24VDC	2TLA010050R0000	General Purpose Safety Relay. 3NO/1NC For use with: E-Stops, Light Curtains, OSSD/PNP Sensors etc...
	SSR10M 85-265VAC	2TLA010050R0100	General Purpose Safety Relay. 3NO/1NC For use with: E-Stops, Light Curtains, OSSD/PNP Sensors etc...
	SSR20 24VDC	2TLA010051R0000	General Purpose Safety Relay. 3NO/1NC For use with: Two-Hand Control Devices
	BSR10 24VDC	2TLA010040R0000	Expansion Relay. 3NO/1NC Used in tandem with another relay to get more output contacts
	TSR10 24VDC	2TLA010060R0000	Timed Safety Relay. 3NO/1NC Programmable with display on relay.
	USR10 24VDC	2TLA010070R0000	Universal Safety Relay. 3NO/1NC For use with nearly every application including Bumpers/ Safety Mats
	USR22 24VDC	2TLA010070R0400	Universal Safety Relay. 2NO / 2 Delayable NO Capable of doing every application.

OPTICAL SAFETY DEVICES

IMAGES	DESIGNATION	Part Number	DESCRIPTION
14mm Beam Spacing – 150 to 1800mm Height Options			
	Orion1-4-14-015-B	2TLA022300R0000	Orion1 Light Curtain Transmitter + Receiver, 14 mm resolution, range 0.2-6 m, Type 4.
	Orion1-4-14-030-B	2TLA022300R0100	
	Orion1-4-14-045-B	2TLA022300R0200	
	Orion1-4-14-060-B	2TLA022300R0300	
	Orion1-4-14-075-B	2TLA020056R0400	
	Orion1-4-14-090-B	2TLA020056R3000	
	Orion1-4-14-105-B	2TLA020056R4000	
	Orion1-4-14-120-B	2TLA020056R4100	
	Orion1-4-14-135-B	2TLA022300R0800	
	Orion1-4-14-150-B	2TLA022300R0900	
	Orion1-4-14-165-B	2TLA022300R1000	
	Orion1-4-14-180-B	2TLA022300R1100	
30mm Beam Spacing - 150 to 1800mm Height Options			
	Orion1-4-30-015-B	2TLA022302R0000	Orion1 Light Curtain Transmitter + Receiver, 30 mm resolution, range 0.2-14 m, Type 4.
	Orion1-4-30-030-B	2TLA022302R0100	
	Orion1-4-30-045-B	2TLA022302R0200	
	Orion1-4-30-060-B	2TLA022302R0300	
	Orion1-4-30-075-B	2TLA022302R0400	
	Orion1-4-30-090-B	2TLA022302R0500	
	Orion1-4-30-105-B	2TLA022302R0600	
	Orion1-4-30-120-B	2TLA022302R0700	
	Orion1-4-30-135-B	2TLA022302R0800	
	Orion1-4-30-150-B	2TLA022302R0900	
	Orion1-4-30-165-B	2TLA022302R1000	
	Orion1-4-30-180-B	2TLA022302R1100	
Note: Additional Light Grids with 500-1200mm long 2-4 Beams are available upon request.			

SENSORS, SWITCHES AND LOCKS

IMAGES	DESIGNATION	ARTICLE NUMBER	DESCRIPTION
Eden – Non – Contact Safety Sensor OSSD (For use with dual channel safety relays)			
	Eva	General Code 2TLA020046R0800	Eva actuator for use with Adam sensors in the Eden sensor system, IP67, yellow, 4pcs of DA2 spacer rings are included.
		Unique Code 2TLA020046R0900	
	Adam OSSD with M12 contact	M12-5 pin 2TLA020051R5400 (Info) 2TLA020051R5600 (Reset)	Adam safety sensor unit with a fixed M12 male connector, IP67, yellow, 4pcs of DA1 protection plate and 4pcs of DA2 spacer rings are included.
		M12-8 pin 2TLA020051R5700 (Info) 2TLA020051R5900 (Reset)	
Eden – Non – Contact Safety Sensor DYNAMIC (For use with Vital and Pluto systems)			
	Eva	General Code 2TLA020046R0800	Eva actuator for use with Adam sensors in the Eden sensor system, IP67, yellow, 4pcs of DA2 spacer rings are included.
		Unique Code 2TLA020046R0900	
	Adam DYN with M12 Contact	M12-5 Pin 2TLA020051R5100 (Info) 2TLA020051R5300(Reset)	Adam safety sensor unit with a fixed M12 male connector, IP67, yellow, 4pcs of DA1 protection plate and 4pcs of DA2 spacer rings are included.

SAFETY AF CONTACTORS

AFS contactors are designed for machine safety applications. They are delivered with fixed front-mounted auxiliary contact blocks making them ideal for monitoring and controlling circuits. Mechanically linked and mirror contacts make your system safer.

- **control circuit with electronic coil interface:**

- 24...60 V AC, 20...60 V DC and 100...250 V AC / DC operated accepting a wide control voltage range

- reduced panel energy consumption

- **mirror and mechanically linked contacts, with front marked symbol acc. to IEC60947-5-1, always guaranteeing the right contactor status**

- **front-mounted auxiliary contact block:**

- permanently fixed

- protective cover to prevent manual operation

- yellow housing for easy identification

- minimum switching capacity 12 V / 3 mA, with a failure rate 10⁻⁷acc. to IEC 60947-5-4

Amp Ratings		Single-Phase HP Ratings		Three-Phase HP Ratings				Auxiliary Contacts		Part Number
AC-3	AC-1	120V	240V	208V	240V	480V	600V	NO	NC	20-60V 50/60Hz - DC Coil*
9	25	0.75	1.5	2	2	5	7.5	2	2	AFS09Z-30-22-30*
9	25	0.75	1.5	2	2	5	7.5	2	2	AFS09-30-22-11
11	28	1	2	3	3	7.5	10	2	2	AFS12-30-22-11
17	30	1.5	3	5	5	10	15	2	2	AFS16-30-22-11
22	45	2	3	7.5	7.5	15	20	2	2	AFS26-30-22-11
27	50	2	5	10	10	20	25	2	2	AFS26-30-22-11
41	60	3	7.5	15	15	30	40	2	2	AFS40-30-22-11
52	80	3	10	20	20	40	50	2	2	AFS52-30-22-11
62	90	5	15	25	25	50	60	2	2	AFS65-30-22-11
77	105	7.5	15	30	30	60	75	2	2	AFS80-30-22-11
77	115	7.5	20	30	30	60	75	2	2	AFS96-30-22-11

*: -30 coil is rated for PLC transistor output: >250mA @ 24VDC



PSR SOFT STARTERS—OPEN TYPE

Features:

- UL/cULus/CE Approved.
- IP21 Degree of Protection.
- Compact design that is suitable for DIN rail or screw mounting.
- Remote control connection with Fieldbus Plug as an accessory.
- System concept with MS116, MS132 or MS450 type Manual Motor Starters and the connection kit.
- All sizes include RUN signal relay; sizes from 25A, also provided with Top of Ramp output signal relay.
- With the addition of an auxiliary cooling fan, starting capacity is increased from 10 to 20 starts per hour.



Rated Current	Three-Phase HP Ratings				Control Voltage	Ramp Type	Dimensions WxHxD (inches)	Part Number
	208V	240V	480V	600V				
3.4	0.5	0.75	2	2	100-240VAC	Start/Stop	1.77 x 5.51 x 4.49	PSR3-600-70
6.1	1	1.5	3	5			1.77 x 5.51 x 4.49	PSR6-600-70
9	2	2	5	7.5			1.77 x 5.51 x 4.49	PSR9-600-70
11	3	3	7.5	10			1.77 x 5.51 x 4.49	PSR12-600-70
15.2	3	5	10	10			1.77 x 5.51 x 4.49	PSR16-600-70
24.2	7.5	7.5	15	20			1.77 x 6.30 x 5.04	PSR25-600-70
28	7.5	10	20	25			1.77 x 6.30 x 5.04	PSR30-600-70
34	10	10	25	30			2.13 x 7.36 x 6.02	PSR37-600-70
46.2	15	15	30	40			2.13 x 7.36 x 6.02	PSR45-600-70
3.4	0.5	0.75	2	2	24VDC	Start/Stop	1.77 x 5.51 x 4.49	PSR3-600-81
6.1	1	1.5	3	5			1.77 x 5.51 x 4.49	PSR6-600-81
9	2	2	5	7.5			1.77 x 5.51 x 4.49	PSR9-600-81
11	3	3	7.5	10			1.77 x 5.51 x 4.49	PSR12-600-81
15.2	3	5	10	10			1.77 x 5.51 x 4.49	PSR16-600-81
24.2	7.5	7.5	15	20			1.77 x 6.30 x 5.04	PSR25-600-81
28	7.5	10	20	25			1.77 x 6.30 x 5.04	PSR30-600-81
34	10	10	25	30			2.13 x 7.36 x 6.02	PSR37-600-81
46.2	15	15	30	40			2.13 x 7.36 x 6.02	PSR45-600-81

ACCESSORIES:



Description	Part Number
Fieldbus Plug Connection Accessory	PSR-FBPA
Connection kit for PSR3-16 and MS116	PSR16-MS116
Connection kit for PSR25-30 and MS132	PSR30-MS132
Connection kit for PSR37-45 and MS450	PSR45-MS450
Fan for 3-45A units	PSR-FAN3-45A
Fan for 60-105A units	PSR-FAN60-105A



PSE SOFT STARTERS—OPEN TYPE

Features:

- UL/cULus/ CE Approved
- Compact design with **Torque Control** feature for excellent control of pumps
- **Built-in bypass** on all sizes, saving energy and installation time
- Coated circuit boards for reliable operation in harsh environment
- Motor overload protection with classes 10A, 10, 20 and 30
- **Current limit** adjustable between **1.5 - 7 x I_e**
- Kick start to start jammed pumps or conveyor belts
- Locked rotor protection, detecting jammed pumps



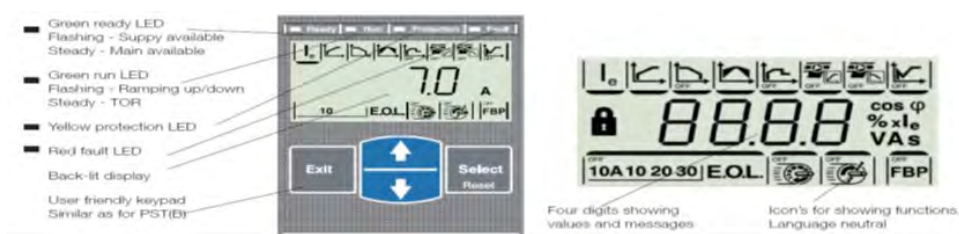
Rated Current	Three-Phase HP Ratings				Control Voltage	Dimensions WxHxD (inches)	Part Number
	208V	240V	480V	600V			
18	5	5	10	15	100-250VAC	3.54 x9.65 x 7.30	PSE18-600-70
25	7.5	7.5	15	20	100-250VAC	3.54 x9.65 x 7.30	PSE25-600-70
28	7.5	10	20	25	100-250VAC	3.54 x9.65 x 7.30	PSE30-600-70
34	10	10	25	30	100-250VAC	3.54 x9.65 x 7.30	PSE37-600-70
42	10	15	30	40	100-250VAC	3.54 x9.65 x 7.30	PSE45-600-70
60	20	20	40	50	100-250VAC	3.54 x9.65 x 7.30	PSE60-600-70
68	20	25	50	60	100-250VAC	3.54 x9.65 x 7.30	PSE72-600-70
80	25	30	60	75	100-250VAC	3.54 x9.65 x 7.30	PSE85-600-70
104	30	40	75	100	100-250VAC	3.54 x9.65 x 7.30	PSE105-600-70
130	40	50	100	125	100-250VAC	5.12 x 11.61 x 8.64	PSE142-600-70
169	60	60	125	150	100-250VAC	5.12 x 11.61 x 8.64	PSE170-600-70
192	60	75	150	200	100-250VAC	7.48 x21.65 x 9.31	PSE210-600-70
248	75	100	200	250	100-250VAC	7.48 x21.65 x 9.31	PSE250-600-70
302	100	100	250	300	100-250VAC	7.48 x21.65 x 9.31	PSE300-600-70
361	125	150	300	350	100-250VAC	7.48 x21.65 x 9.31	PSE370-600-70

ACCESSORIES:



Description	Part Number	Remark
Fieldbus Plug Connection Accessory	PS-FBPA	
External keypad including 3 meter cable (PSE18... 370)	PSE185	
Cable connectors for Al and Cu cables		
PSE142...170 (Qty required 2 for line & load)	ATK185	Suitable for wire size 4AWG-300MCM
PSE210...370 (Qty required 2 for line & load)	ATK300	Suitable for wire size 4AWG-400MCM
PSE210...370 (Qty required 2 for line & load)	ATK300/2	Suitable for wire size 2 x 4AWG-500MCM
Terminal Shrouds		
PSE142...170 (Qty required 2 for line & load)	LT185-AL	
PSE210...370 (Qty required 2 for line & load)	LT300-AL	Not compatible with ATK300/2

PSE SOFT STARTERS—FEATURES & DISPLAY SETTINGS



PSTX SOFT STARTERS—OPEN TYPE

Features:

- UL/CSA/CE Approved.
- Programmable electronic overloads: classes 10A, 10, 20 & 30.
- **Three-phase controlled**
- Operational voltage: 208 – 690 VAC
- PSTX rated operational current: 30 to 370 A (inside-delta: 640 A)
- Detachable keypad rated IP66 (Type 1, 4X,12)
- Built-in bypass for energy saving and easy installation
- Pre-configured start & stop profiles for common applications including pumps, conveyors, fans, mixers & compressors.
- Complete control of pumps, Three types of current limit, Jog with slow speed

CONNECTED IN-LINE



Rated Current	Three-Phase HP Ratings				Control Voltage 50/60 HZ	Ramp Type	Dimensions WxHxD (inches)	Part Number
	208V	240V	480V	600V				
28	7.5	10	20	25	100-250VAC	Start/Stop	5.90 x 12.40 x 7.60	PSTX30-690-70
34	10	10	25	30			5.90 x 12.40 x 7.60	PSTX37-690-70
42	10	15	30	40			5.90 x 12.40 x 7.60	PSTX45-690-70
60	20	20	40	50			5.90 x 12.40 x 7.60	PSTX60-690-70
68	20	25	50	60			5.90 x 12.40 x 7.60	PSTX72-690-70
80	25	30	60	75			5.90 x 12.40 x 7.60	PSTX85-690-70
104	30	40	75	100			5.90 x 12.40 x 7.60	PSTX105-690-70
130	40	50	100	125			7.80 x 14.80 x 9.30	PSTX142-690-70
169	50	60	125	150			7.80 x 14.80 x 9.30	PSTX170-690-70
192	60	75	150	200			10.20 x 18.50 x 10.90	PSTX210-690-70
248	75	100	200	250			10.20 x 18.50 x 10.90	PSTX250-690-70
302	100	100	250	300			10.20 x 18.50 x 10.90	PSTX300-690-70
361	125	150	300	350			10.20 x 18.50 x 10.90	PSTX370-690-70
480	150	200	400	500			14.20 x 19.40 x 11.10	PSTX470-690-70
590	200	200	500	600			14.20 x 19.40 x 11.10	PSTX570-690-70
720	250	300	600	700			17.13 x 19.41 x 14.47	PSTX720-690-70
840	300	350	700	800			17.13 x 19.41 x 14.47	PSTX840-690-70
1062	400	450	900	1000			17.10 x 20.20 x 14.40	PSTX1050-690-70
1250	400	500	1000	1200			17.10 x 22.20 x 14.40	PSTX1250-690-70

ACCESSORIES (PSTX30-PSTX1250):



Description			Part Number
Fieldbus Plug Connection Accessory			PS-FBPA
I/O Module, 24VDC Digital Input			1SAJ611000R0101
Anybus connection accessory available (Profibus, DeviceNet, Modbus-RTU, EtherNet/IP, Modbus/TCP, Profinet)			*
Description	Wire Range	Part Number	Package QTY
PSTX142 – PSTX170	#6 - 300MCM (1 Per Phase)	ATK185	3
PSTX210 – PSTX370	#4 – 400MCM (1 Per Phase)	ATK300	3
PSTX210 – PSTX370	#4 – 500MCM (2 Per Phase)	ATK300/2	3
PSTX470 – PSTX1050	2/0 – 500MCM (2 per Phase)	ATK580/2	3
PSTX470 – PSTX1050	2/0 – 500MCM (3 per Phase)	ATK750/3	3
PSTX1250	4/0 – 500MCM (4 Per Phase)	ATK1350/4	3

*Please refer to ABB PSTX Softstarters catalog

PSTX SOFT STARTERS - ENCLOSED - FEATURES



HORSEPOWER	25 to 700HP
DUTY	Normal Duty or Heavy Duty
COMBINATION TYPE	Circuit Breaker or Fused Disconnect
ENCLOSURE TYPE	NEMA 4
LINE VOLTAGE	• 600V Line Voltage, 120V Control Voltage • 480V Line Voltage, 120V Control Voltage
STANDARD EQUIPMENT PACKAGE FEATURES	• Circuit Breaker or Fused Disconnect • Door Mounted Keypad • Start Pushbutton • Stop Pushbutton • Hand/Off/Auto Selector Switch • Power ON Pilot Light • Run Pilot Light • Fault Pilot Light • Integrated Control Transformer
FULL EMERGENCY BYPASS PACKAGE FEATURES	• Emergency Bypass • Normal/E-Bypass Selector Switch • E-Bypass Start Pushbutton • E-Bypass Stop Pushbutton • E-Bypass Pilot Light • Circuit Breaker or Fused Disconnect • Door Mounted Keypad • Start Pushbutton • Stop Pushbutton • Hand/Off/Auto Selector Switch • Power ON Pilot Light • Run Pilot Light • Fault Pilot Light • Integrated Control Transformer

1. The pilot light LED colors are: Power On (white), Run (green), Fault (yellow), Emergency Bypass (yellow).

COMPARISON BETWEEN ABB MICRO DRIVES (ACS55, ACS150, ACS255 & ACS355)


	ACS55	ACS150	ACS255	ACS355
	Component Drives			General Machinery Drive
Ratings				
1 PH 120VAC IN & 3 PH 200-240 VAC OUT	0.25 to 0.5 HP	-	0.50 to 1.5 HP	-
1 PH 200-240VAC IN & 3 PH 200-240 VAC OUT	0.25 to 3 HP	0.50 to 3 HP	0.50 to 5 HP (IP66 Version Only)	0.50 to 3 HP
3 PH 200-240VAC IN & 3 PH 200-240 VAC OUT	-	0.50 to 3 HP	0.50 to 5 HP (IP66 Version Only)	0.50 to 15 HP
3 PH 380-480VAC IN & 3 PH 380-480 VAC OUT	-	0.50 to 5 HP	1 to 10 HP (IP66 Version Only)	0.50 to 30 HP
3 PH 500-600VAC IN & 3 PH 500-600 VAC OUT	-	-	1 to 20 HP (IP20) / 1 to 15HP (IP66)	-
Features	Description			
Motor Control	V/Hz	V/Hz	V/Hz or Sensorless Vector	V/Hz or Sensorless Vector
Protection Class	IP 20	IP 20 (NEMA1 Kit Option)	IP 20 and IP66 (NEMA 4X Indoor Plastic Encl.)	IP 20 (NEMA1 Kit Option) and IP66 (NEMA 4X Indoor, Plastic Encl.)
Digital Inputs	(3) 12 V DC Fixed Function – Start/Stop, Reverse, Jog	(5) 12-24VDC All Programmable	(4) 10-30VDC All Programmable	(5) 12-24V DC All Programmable
Analog Inputs	(1) Configurable 0-10V, 0-20mA or Potentiometer Reference	(1) Configurable 0-10V, 0-20mA	(2) Configurable unipolar voltage, 0-10V, 0-20mA	(2) Configurable unipolar or bipolar voltage, 0-10V, 0-20mA
Analog Outputs	N/A	N/A	(1) Configurable 0-10V (2 in 600V)	(1) Non-isolated, 0-20mA
Outputs	(1) N.O Relay Contact (Run or Fault)	(1) Form C Relay	(1) Form C Relay	(1) Form C Relay, (1) Transistor 100mA/30VDC
Program Interface	(8) DIP Switches	Basic LCE		None, Basic or Advanced LCD
PID Loop	N/A	N/A	Yes	(1) Loop with sleep (1) Loop without sleep
Braking (Brake Chopper)	-	Standard	Built-in	Standard
Accel/Decel Times (seconds)	0.1-30	0.1-1800	0.1-600	0.1-1800
Power Loss Ride-Through (seconds)	0.2-0.5	0.2-0.5	-	0.2-0.5
Communications	-	-	Modbus	Fieldbus Plugin option (DeviceNet/Profibus, DP/CAN open/Modbus, RTU/EtherCAT/Ethernet, IP/LonWorks)
Options	 Potentiometer with Run/Stop, Fwd/Rev	 NEMA 1 Enclosure Kit, Flashdrop		NEMA 1 Enclosure Kit
				NEMA4X/IP66 (Indoor) Kit
				Flashdrop
				Pulse Encoder Interface Module
				Basic or Advance
				Control Panel
				Control Panel Mounting Kit
				Potentiometer
	DriveWindow Light Software			
Applications				
Food & Beverage/Material Handling/Textile/Printing/Plastics/Rubber/Woodworking; Entry Gates, Ovens, Powered Rood Ventilators, X-Ray Screening, Training Equipment				

ACS55 VARIABLE FREQUENCY DRIVES

Features:

- UL/cUL/CE/C-Tick Approved.
- No Programming – All settings are made with DIP switches and potentiometers.
- Compact size and thin shape.
- Automatic switching frequency increases switching frequency automatically, when drive temperature is decreased.
- Plug-in Potentiometer option.
- Optional DriveConfig Kit for fast & safe configuration of drives without the need for power connection.
- Removable mounting clip that allows DIN rail & wall mounting from back and side of the unit.

Applications:

- Pumps, fans, appliances, contactors.
- Soft starters, N-speed motors, Triacs, Step transformers.



Input Voltage Rating +10% / -15%	Output Ratings				Frame Size	Part Number
	Voltage	Amps		HP	IP20 Enclosure	
		I _{2n}	I _{2max}			
110 – 120 VAC 1PH	200 – 240 VAC 3PH	1.4	2.1	0.25	A	ACS55-01N-01A4-1-U
110 – 120 VAC 1PH	200 – 240 VAC 3PH	2.2	3.3	0.5	A	ACS55-01N-02A2-1-U
200 – 240 VAC 1PH	200 – 240 VAC 3PH	1.4	2.1	0.25	A	ACS55-01N-01A4-2-U
200 – 240 VAC 1PH	200 – 240 VAC 3PH	2.2	3.3	0.5	A	ACS55-01N-02A2-2-U
200 – 240 VAC 1PH	200 – 240 VAC 3PH	4.3	6.5	1.0	B	ACS55-01N-04A3-2-U
200 – 240 VAC 1PH	200 – 240 VAC 3PH	7.6	11.4	2.0	C	ACS55-01N-07A6-2-U
200 – 240 VAC 1PH	200 – 240 VAC 3PH	9.8	14.7	3.0	C	ACS55-01N-09A8-2-U

I_{2n} Nominal current output

I_{2max} Maximum current allowed for 1 minute every 10 minutes

Frame Size	Dimension and Weight							
	W		H**		D		Weight	
	mm	in	mm	in	mm	in	kg	lbs
A	45	1.77	146.5	5.77	128	5.04	0.7	1.5
B	67.5	2.66	146.5	5.77	128	5.04	1.1	2.4
C	70	2.8	171	6.7	159	6.3	1.1	2.4

**Height without mounting clip



Potentiometer with Run/Stop and FWD/REV Part Number: ACS50-POT

DriveConfig Kit (Serial) Part Number: RFDT-01



DriveConfig Kit (USB) Part Number: RFDT-02

ACS150 VARIABLE FREQUENCY DRIVES

Features:

- UL/cUL/CE approved.
- Offline parameter setup with optional FlashDrop.
- Built-in brake chopper providing 100% braking capabilities.
- Programmable Analog and Digital Inputs and Relay Outputs.
- Integrated LCD operator interface and potentiometer.
- Built-in EMC filter.
- Coated boards as standard, protects against moisture and hostile particles.
- Flexible installation – Screw, DIN rail, Sideways and Side by Side mounting.

Applications:

- Pumps
- Fans
- Gate Control
- Woodworking
- Conveyors
- Food and Beverage
- Material Handling
- Textile
- Printing
- Rubber and Plastics



Input Voltage Rating ±10%	Output Ratings				Frame Size	Part Number
	Voltage	Amps		HP	IP20 Enclosure	
		I _{2n}	I _{2max}			
200 – 240 VAC 1PH	200 – 240 VAC 3PH	2.4	3.6	0.5	R0	ACS150-01U-02A4-2
200 – 240 VAC 1PH	200 – 240 VAC 3PH	4.7	7.1	1.0	R1	ACS150-01U-04A7-2
200 – 240 VAC 1PH	200 – 240 VAC 3PH	6.7	10.1	1.5	R1	ACS150-01U-06A7-2
200 – 240 VAC 1PH	200 – 240 VAC 3PH	7.5	11.3	2.0	R2	ACS150-01U-07A5-2
200 – 240 VAC 1PH	200 – 240 VAC 3PH	9.8	14.7	3.0	R2	ACS150-01U-09A8-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	2.4	3.6	0.5	R0	ACS150-03U-02A4-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	3.5	5.3	0.75	R0	ACS150-03U-03A5-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	4.7	7.1	1.0	R1	ACS150-03U-04A7-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	6.7	10.1	1.5	R1	ACS150-03U-06A7-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	7.5	11.3	2.0	R1	ACS150-03U-07A5-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	9.8	14.7	3.0	R2	ACS150-03U-09A8-2
380 – 480 VAC 3PH	380 – 480 VAC 3PH	1.2	1.8	0.5	R0	ACS150-03U-01A2-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	1.9	2.9	0.75	R0	ACS150-03U-01A9-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	2.4	3.6	1.0	R0	ACS150-03U-02A4-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	3.3	5.0	1.5	R1	ACS150-03U-03A3-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	4.1	6.2	2.0	R1	ACS150-03U-04A1-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	5.6	8.4	3.0	R1	ACS150-03U-05A6-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	8.8	13.2	5.0	R1	ACS150-03U-08A8-4

I_{2n} : Nominal current output

I_{2max} : Maximum current allowed for 1 minute every 10 minutes



Frame Size	Dimension and Weight (For Cabinet Mount)							
	W		H**		D		Weight	
	mm	in	mm	in	mm	in	kg	lbs
R0	70	2.76	239	9.41	142	5.59	1.1	2.14
R1	70	2.76	239	9.41	142	5.59	1.3	2.9
R2	150	4.13	239	9.41	142	5.59	1.5	3.3

**Height without mounting clip

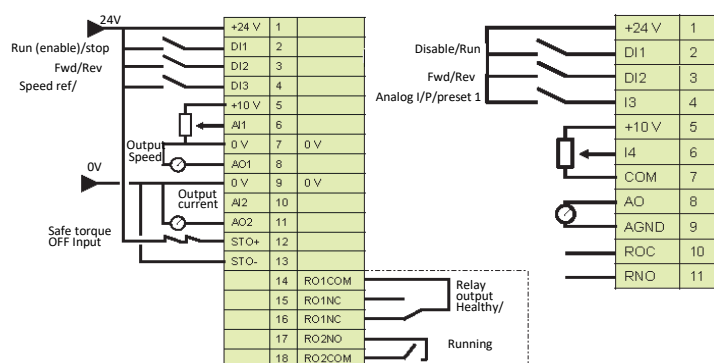
OPTIONS:

NEMA 1 kit MUL1-R1
FlashDrop MFDT01

ACS255 MICRO DRIVES (600V)

Features

- Easy to use, compact design
- Rated for 150% overload for 60 sec as standard
- DIN rail mounting
- Pluggable control terminals
- High performance vector control
- Built-in braking chopper in all types
- Built-in communication with Modbus RTU and CANopen® interfaces
- Remote keypad available as an option
- Built-in safe torque-off (STO) complies with EN62061SIL level 2



Applications:

- Screws
- Mixers
- Pumps
- Fans
- Conveyors

Output Ratings		Part Number IP20 Enclosure	Frame Size	Height mm/in	Width mm/in	Depth mm/in	Weight kg/lbs
Power (HP)	Amps (I)						
Input: 3-Phase AC supply, 500 to 600 V							
1	2.1	ACS255-03U-02A1-6	P2	221/8.70	112/4.41	185/7.28	1.8/4
2	3.1	ACS255-03U-03A1-6	P2	221/8.70	112/4.41	185/7.28	1.8/4
3	4.1	ACS255-03U-04A1-6	P2	221/8.70	112/4.41	185/7.28	1.8/4
5	6.5	ACS255-03U-06A5-6	P2	221/8.70	112/4.41	185/7.28	1.8/4
7.5	9	ACS255-03U-09A0-6	P2	221/8.70	112/4.41	185/7.28	1.8/4
10	12	ACS255-03U-12A0-6	P3	261/10.28	131/5.16	205/8.07	3.5/7.7
15	17	ACS255-03U-17A0-6	P3	261/10.28	131/5.16	205/8.07	3.5/7.7
20	22	ACS255-03U-22A0-6	P3	261/10.28	131/5.16	205/8.07	3.5/7.7



ACS255 MICRO DRIVES: TYPE 4X / IP66 (INDOOR) ENCLOSURE

Features

- Built-in macros and only the essential parameters make commissioning straightforward
- Intuitive keypad control
- IP66/Nema 4X dust and water proof design (wash down)
- Specially coated corrosion resistant heat sink
- Can be mounted directly on processing equipment installed in extreme environments
- No external cooling fans to replace
- Conduit cable entry
- Modbus RTU fieldbus as standard
- Optional switch features speed potentiometer, FWD-0-REW and power isolator
- Full voltage range from 110 to 600VAC.

Applications:

- Screws
- Mixers
- Pumps
- Fans
- Conveyors



Optional

Note: For typical I/O configuration for 600V please refer to fig. 1 and for 115V/230V/480V please refer to fig.2 above.

ACS255 MICRO DRIVES: TYPE 4X / IP66 (INDOOR) ENCLOSURE

Output Ratings			Part Number IP66 Enclosure	Frame Size	Braking chopper	Height mm/in	Width mm/in	Depth mm/in	Weight kg/lbs
Voltage (V)	Power (HP)	Amps (I)							
Input: 1-Phase AC supply, 110 to 120 V									
200 - 240VAC 3PH	0.5	2.3	ACS255-01U-02A3-1+ B063	E1	-	232/9.13	161/6.34	179/7.05	2.8/6.50
200 - 240VAC 3PH	1	4.3	ACS255-01U-04A3-1+ B063	E1	-	232/9.13	161/6.34	179/7.05	2.8/6.50
200 - 240VAC 3PH	1.5	5.8	ACS255-01U-05A8-1+ B063	E2	X	257/10.12	188/7.40	186/7.34	4.1/9.26
Input: 1-Phase AC supply, 200 to 240 V									
200 - 240VAC 3PH	0.5	2.3	ACS255-01U-02A3-2+ B063	E1	-	232/9.13	161/6.34	179/7.05	2.8/6.50
200 - 240VAC 3PH	1	4.3	ACS255-01U-04A3-2+ B063	E1	-	232/9.13	161/6.34	179/7.05	2.8/6.50
200 - 240VAC 3PH	1.5	6.1	ACS255-01U-06A1-2+ B063	E1	-	232/9.13	161/6.34	179/7.05	2.8/6.50
200 - 240VAC 3PH	2	7.0	ACS255-01U-07A0-2+ B063	E1	-	232/9.13	161/6.34	179/7.05	2.8/6.50
200 - 240VAC 3PH	3	10.5	ACS255-01U-10A5-2+ B063	E2	X	257/10.12	188/7.40	186/7.34	4.1/9.26
200 - 240VAC 3PH	5	18.0	ACS255-01U-18A0-2+ B063	E3	X	310/12.20	210/8.29	229/9.00	7.6/16.9 76
Input: 3-Phase AC supply, 200 to 240 V									
200 - 240VAC 3PH	0.5	2.3	ACS255-03U-02A3-2+ B063	E1	-	232/9.13	161/6.34	179/7.05	2.8/6.50
200 - 240VAC 3PH	1	4.3	ACS255-03U-04A3-2+ B063	E1	-	232/9.13	161/6.34	179/7.05	2.8/6.50
200 - 240VAC 3PH	1.5	6.1	ACS255-03U-06A1-2+ B063	E1	-	232/9.13	161/6.34	179/7.05	2.8/6.50
200 - 240VAC 3PH	2	7.0	ACS255-03U-07A0-2+ B063	E2	X	257/10.12	188/7.40	186/7.34	4.1/9.26
200 - 240VAC 3PH	3	10.5	ACS255-03U-10A5-2+ B063	E2	X	257/10.12	188/7.40	186/7.34	4.1/9.26
200 - 240VAC 3PH	5	18.0	ACS255-03U-18A0-2+ B063	E3	X	310/12.20	210/8.29	229/9.00	7.6/16.97
Input: 3-Phase AC supply, 380 to 480 V									
380 - 480VAC 3PH	0.5	1.2	ACS255-03U-01A2-4+ B063	E1	-	232/9.13	161/6.34	179/7.05	2.8/6.50
380 - 480VAC 3PH	1	2.2	ACS255-03U-02A2-4+ B063	E1	-	232/9.13	161/6.34	179/7.05	2.8/6.50
380 - 480VAC 3PH	1.5	3.3	ACS255-03U-03A3-4+ B063	E1	-	232/9.13	161/6.34	179/7.05	2.8/6.50
380 - 480VAC 3PH	2	4.1	ACS255-03U-04A1-4+ B063	E1	-	232/9.13	161/6.34	179/7.05	2.8/6.50
380 - 480VAC 3PH	3	5.8	ACS255-03U-05A8-4+ B063	E2	X	257/10.12	188/7.40	186/7.34	4.1/9.26
380 - 480VAC 3PH	5	9.5	ACS255-03U-09A5-4+ B063	E2	X	257/10.12	188/7.40	186/7.34	4.1/9.26
380 - 480VAC 3PH	7.5	14.0	ACS255-03U-14A0-4+ B063	E3	X	310/12.20	210/8.29	229/9.00	7.6/16.97
380 - 480VAC 3PH	10	18.0	ACS255-03U-18A0-4+ B063	E3	X	310/12.20	210/8.29	229/9.00	7.6/16.97
Input: 3-Phase AC supply, 500 to 600 V									
500 - 600VAC 3PH	1	2.1	ACS255-03U-02A1-6+ B063	P2	X	257/10.12	188/7.40	239/9.41	4.8/10.6
500 - 600VAC 3PH	2	3.1	ACS255-03U-03A1-6+ B063	P2	X	257/10.12	188/7.40	239/9.41	4.8/10.6
500 - 600VAC 3PH	3	4.1	ACS255-03U-04A1-6+ B063	P2	X	257/10.12	188/7.40	239/9.41	4.8/10.6
500 - 600VAC 3PH	5	6.5	ACS255-03U-06A5-6+ B063	P2	X	257/10.12	188/7.40	239/9.41	4.8/10.6
500 - 600VAC 3PH	7.5	9.0	ACS255-03U-09A0-6+ B063	P2	X	257/10.12	188/7.40	239/9.41	4.8/10.6
500 - 600VAC 3PH	10	12.0	ACS255-03U-12A0-6+B063	P3	X	310/12.20	211/8.29	251/9.88	7.3/16.1
500 - 600VAC 3PH	15	17.0	ACS255-03U-17A0-6+B063	P3	X	310/12.20	211/8.29	251/9.88	7.3/16.1

ACS355 VARIABLE FREQUENCY DRIVES

Features:

- UL/cUL/CE approved.
- Offline parameter setup with optional FlashDrop.
- Software with sensorless vector and flux control.
- Built-in brake chopper.
- Programmable Analog and Digital Inputs and Analog, Digital and Relay Outputs.
- Plug-in options such as Potentiometer, Fieldbus protocols.
- Detachable Advanced Control Panel for easy programming, copy/downloading parameters to other drives.
- Sequence programming for PLC-like functions.
- Start-up/Maintenance/Diagnostic Assistants for fast set up and eliminating or reducing down-time.
- Drive protection: a) Motor output & I/Os protected against wiring faults; b) Protection against unstable supply networks; c) Coated boards included as standard.

Applications

- Food and Beverage
- Material Handling
- Textile
- Printing
- Rubber and Plastics
- Woodworking



Input Voltage Rating ±10%	Output Ratings				Frame Size	Part Number
	Voltage	Amps		HP	IP20 Enclosure	
		I _{2n}	I _{2max}			
200 – 240 VAC 1PH	200 – 240 VAC 3PH	2.4	3.6	0.5	R0	ACS355-01U-02A4-2
200 – 240 VAC 1PH	200 – 240 VAC 3PH	4.7	7.1	1	R1	ACS355-01U-04A7-2
200 – 240 VAC 1PH	200 – 240 VAC 3PH	6.7	10.1	1.5	R1	ACS355-01U-06A7-2
200 – 240 VAC 1PH	200 – 240 VAC 3PH	7.5	11.3	2	R2	ACS355-01U-07A5-2
200 – 240 VAC 1PH	200 – 240 VAC 3PH	9.8	14.7	3	R2	ACS355-01U-09A8-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	2.4	3.6	0.5	R0	ACS355-03U-02A4-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	3.5	5.3	0.75	R0	ACS355-03U-03A5-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	4.7	7.1	1	R1	ACS355-03U-04A7-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	6.7	10.1	1.5	R1	ACS355-03U-06A7-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	7.5	11.3	2	R1	ACS355-03U-07A5-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	9.8	14.7	3	R2	ACS355-03U-09A8-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	13.3	20.0	4	R2	ACS355-03U-13A3-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	17.6	26.4	5	R2	ACS355-03U-17A6-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	24.4	36.6	7.5	R3	ACS355-03U-24A4-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	31.0	46.5	10	R4	ACS355-03U-31A0-2
200 – 240 VAC 3PH	200 – 240 VAC 3PH	46.2	69.3	15	R4	ACS355-03U-46A2-2

I_{2n} Nominal current output

I_{2max} Maximum current allowed for 1 minute every 10 minutes

ACS355 HIGH PROTECTION CLASS VARIABLE FREQUENCY DRIVES—IP66 / UL TYPE 4X (INDOOR)



Designed for the harshest and most demanding conditions such as dust, moisture and cleaning chemicals. Drives are suitable for Screws, Mixers, Pumps, Fans and Conveyors. Some of the applications include but are not limited to –

- Food and Beverage
- Textile
- Ceramics
- Water and Waste Water
- Pulp and Paper
- Chemical

ACS355 VARIABLE FREQUENCY DRIVES

Input Voltage Rating ±10%	Output Ratings				Frame Size	Part Number
	Voltage	Amps		HP		
		I _{2n}	I _{2max}			
380 – 480 VAC 3PH	380 – 480 VAC 3PH	1.2	1.8	0.5	R0	ACS355-03U-01A2-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	1.9	2.9	0.75	R0	ACS355-03U-01A9-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	2.4	3.6	1	R1	ACS355-03U-02A4-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	3.3	5	1.5	R1	ACS355-03U-03A3-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	4.1	6.2	2	R1	ACS355-03U-04A1-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	5.6	8.4	3	R1	ACS355-03U-05A6-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	8.8	11	5	R1	ACS355-03U-08A8-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	12.5	13.2	7.5	R3	ACS355-03U-12A5-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	15.6	23.4	10	R3	ACS355-03U-15A6-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	23.1	34.7	15	R3	ACS355-03U-23A1-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	31.0	46.5	20	R4	ACS355-03U-31A0-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	38	57.0	25	R4	ACS355-03U-38A0-4
380 – 480 VAC 3PH	380 – 480 VAC 3PH	44	66	30	R4	ACS355-03U-44A0-4

Frame Size	Dimension and Weight (Open)							
	W		H**		D		Weight	
	mm	in	mm	in	mm	in	kg	lbs
R0	70	2.76	239	9.41	161	6.34	1.1	2.4
R1	70	2.76	239	9.41	161	6.34	1.3	2.9
R2	105	4.13	239	9.41	165	6.5	1.5	3.3
R3	169	6.65	236	9.29	169	6.65	2.5	5.5
R4	260	10.2	241	9.51	169	6.65	4.4	9.7



FlashDrop

OPTIONS:

- FlashDrop MFDT01.
- Panel Mounting Kit ACS/H-CP-EXT.
- NEMA 1 Kit MUL1-R1 (Frame size R0, R1, R2).
- NEMA 1 Kit MUL1-R3 (Frame size R3).
- NEMA 1 Kit MUL1-R4 (Frame size R4).
- Panel Holder Mounting Kit OPMP-01



Panel Holder Mounting Kid OPMP-01
(Allows keypad to be removed from the panel holder mounted on the door)

Option Selection Table		
Ordering Suffix	Description	Part Number
Control Panel		
J400	Advance Control Panel	ACS-CP-A
J404	Basic Control Panel	ACS-CP-C
Potentiometer		
J402	Potentiometer	MPOT-01
Fieldbus		
K451	DeviceNet	FDNA-01
K454	PROFIBUS DP	FPBA-01
K457	CANopen	FCAN-01
	ControlNet	FCNA-01
K458	ModBus RTU Adapter	FMBA-01
K466	Ethernet IP/ModBus	FENA-01
K452	LonWorks	FLON-01
K469	EtherCat	FECA-01

ACS580 VARIABLE FREQUENCY DRIVES

NEW

EXTENDED WARRANTY
When Gerrie Commissions the Drive

ABB Emergency Technical Support

abbautomation@gerrie.com

Tel: (289) 861-5593

Features:

- Coated boards for harsh environment.
- Complete with swinging DC Chokes – reduces harmonics, cost of energy and size/weight.
- Integrated brake chopper on R1, R2 and R3 frames.
- Integrated STO SIL 3, PL e
- Programmable Analog and Digital Inputs and Analog and Relay Outputs.
- Plug-in options such as Relay Output Extension, Pulse Encoder Interface, 115/230V Digital Interface or Fieldbus.
- Embedded Modbus RTU, Optional fieldbus modules available: DeviceNet, Profibus-DP, CANOpen, ControlNet, Ethernet/IP, Modbus/TCP and PROFINET IO.
- Assistant Control Panel **included** for easy programming, copying/downloading parameters to other drives.
- Start-up/Maintenance/Diagnostic Assistants for fast set up and eliminating or reducing down-time.
- Bluetooth Keypad and Phone App available as an extra (iOS/Android)



Applications:

- Pumps
- Extruders
- Conveyors - Screw or Chain
- Agitators, Mixers, Grinders
- Fans
- Slurry Pumps
- Compressors
- Chippers/Shredders



Voltage Rating (VAC)	Normal Ratings				Frame Size	Part Number
	Normal Duty* Applications with 110% overload (110% I _N)		Heavy Duty Applications with 150% overload (150% I _{HD})			
	I _{2N} A	P _N HP	I _{2HD} A	P _{HD} HP		
208 - 240 VAC	4.6	1	3.5	0.75	R1	ACS580-01-04A6-2
	6.6	1.5	4.6	1	R1	ACS580-01-06A6-2
	7.5	2	6.6	1.5	R1	ACS580-01-07A5-2
	10.6	3	7.5	2	R1	ACS580-01-10A6-2
	16.7	5	10.6	3	R1	ACS580-01-017A-2
	24.2	7.5	16.7	5	R2	ACS580-01-024A-2
	30.8	10	24.2	7.5	R2	ACS580-01-031A-2
	46.2	15	30.8	10	R3	ACS580-01-046A-2
	59.4	20	46.2	15	R3	ACS580-01-059A-2
	74.8	25	59.4	20	R4	ACS580-01-075A-2
	88	30	74.8	25	R5	ACS580-01-088A-2
	114	40	88	30	R5	ACS580-01-114A-2
	143	50	114	40	R6	ACS580-01-143A-2
	169	60	143	50	R7	ACS580-01-169A-2
	211	75	169	60	R7	ACS580-01-211A-2
	273	100	211	75	R8	ACS580-01-273A-2

ACS580 VARIABLE FREQUENCY DRIVES

EXTENDED WARRANTY When Gerrie Commissions the Drive

Voltage Rating	Nominal Ratings				Part Number	Frame Size
	Normal Duty Applications with 110% overload (110% I _N)		Heavy Duty Applications with 150% overload (150% I _{HD})			
	I _N A	P _N HP	I _{HD} A	P _{HD} HP	NEMA 1 ENCLOSURE	
380 - 480 VAC	2.1	1	1.6	0.75	ACS580-01-02A1-4	R1
	3.0	1.5	2.1	1	ACS580-01-03A0-4	R1
	3.5	2	3.0	1.5	ACS580-01-03A5-4	R1
	4.8	3	3.4	2	ACS580-01-04A8-4	R1
	6.0	3	4	3	ACS580-01-06A0-4	R1
	7.6	5	4.8	3	ACS580-01-07A6-4	R1
	12	7.5	7.6	5	ACS580-01-012A-4	R1
	14	10	11	7.5	ACS580-01-014A-4	R2
	23	15	14	10	ACS580-01-023A-4	R2
	27	20	21	15	ACS580-01-027A-4	R3
	34	25	27	20	ACS580-01-034A-4	R3
	44	30	34	25	ACS580-01-044A-4	R3
	52	40	40	30	ACS580-01-052A-4	R4
	65	50	52	40	ACS580-01-065A-4	R4
	77	60	65	50	ACS580-01-077A-4	R4
	77	60	65	50	ACS580-01-078A-4	R5
	96	75	77	60	ACS580-01-096A-4	R5
	124	100	96	75	ACS580-01-124A-4	R6
	156	125	124	100	ACS580-01-156A-4	R7
	180	150	156	125	ACS580-01-180A-4	R7
240	200	180	150	ACS580-01-240A-4	R8	
260	200	240*	150	ACS580-01-260A-4	R8	
302	250	260	200	ACS580-01-302A-4	R8	
361	300	302	250	ACS580-01-361A-4	R9	
414	350	361**	300	ACS580-01-414A-4	R9	
500-600 VAC	2.7	2	2.4	1.5	ACS580-01-02A7-6	R2
	3.9	3	2.7	2	ACS580-01-03A9-6	R2
	6.1	5	3.9	3	ACS580-01-06A1-6	R2
	9	7.5	6.1	5	ACS580-01-09A0-6	R2
	11	10	9	7.5	ACS580-01-011A-6	R2
	17	15	11	10	ACS580-01-017A-6	R2
	22	20	17	15	ACS580-01-022A-6	R3
	27	25	22	20	ACS580-01-027A-6	R3
	32	30	27	25	ACS580-01-032A-6	R3
	41	40	32	30	ACS580-01-041A-6	R5
	52	50	41	40	ACS580-01-052A-6	R5
	62	60	52	50	ACS580-01-062A-6	R5
	77	75	62	60	ACS580-01-077A-6	R5
	99	100	77	75	ACS580-01-099A-6	R7
	125	125	99	100	ACS580-01-125A-6	R7
	144	150	125	125	ACS580-01-144A-6	R8
	192	200	144	150	ACS580-01-192A-6	R9
	242	250	192	200	ACS580-01-242A-6	R9
	271	250	210	200	ACS580-01-271A-6	R9

NOTES:

- 1) Always select the drive based on the motor name plate current and the application.
 - 2) NEMA 12 enclosed drives are available
- *Continuous current allowing 130% overload for 1 minute every 10 minutes.
- **Continuous current allowing 125% overload for 1 minute every 10 minutes.

Frame Size	R1	R2	R3	R4	R5	R6	R7	R8	R9
	in/lbs	in/lbs	in/lbs	in/lbs	in/lbs	in/lbs	in/lbs	in/lbs	in/lbs
H	14.7	18.6	19.3	25	28.8	28.6	34.7	38	37.6
W	4.92	4.92	7.99	7.99	7.99	9.92	11.2	11.81	15
D	8.78	9.00	9.02	10.1	11.6	14.5	14.6	15.47	16.5
Weight	10.1	14.6	26.0	62.4	62.4	93.5	119	152.2	214

ACS580 VARIABLE FREQUENCY DRIVES—OPTIONS

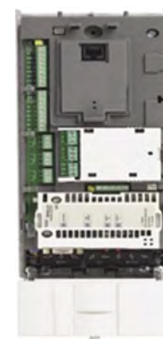
DOOR MOUNTING KIT (SURFACE MOUNT)

PART NUMBER: DPMP-EXT

Control panel mounting kit – Surface mounted to the electrical enclosure door.

OPTIONS:

Option Code (Factory installed option)	Description	Part # (Field installed option)
Software		
—	Drive Composer Pro	3AUA0000108087
Protection Class		
+B056	UL Type 12 (IP55)	—
+B058	UL Type 3R	—
Field Bus Adapters		
—	115/230V Digital Interface	ODHI-01-KIT
—	DeviceNet	FDNA-01
—	Profibus-DP	FPBA-01
—	Ethernet/IP	FEIP-21
—	Modbus/TCP	FMBT-21



NOTE: Only one option can be installed in each option slot. For the field installed options, order it as a separate item using the above mentioned part number.

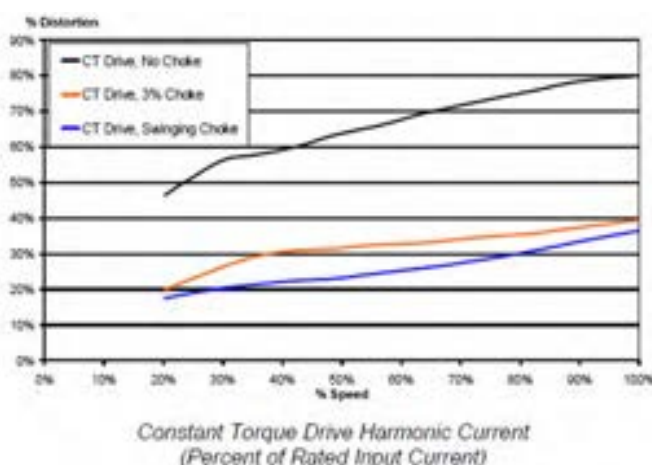
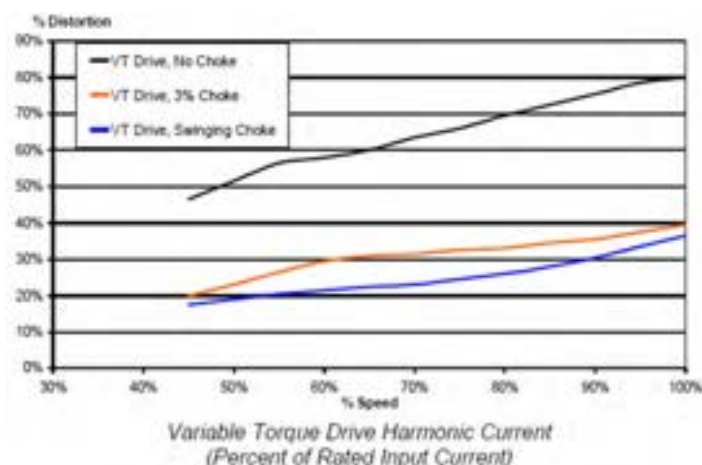
PATENTED SWINGING CHOKE (REACTOR) REDUCES HARMONICS

What is a swinging choke?

The swinging choke is an inductor that has an inductance value that is inversely proportional to its operating current. Over a substantial portion of the current range, the inductance decreases as the current in the choke increases. A conventional or linear choke has a fixed inductance value that changes very little as the operating current values in the normal operating range.

Advantages of Swinging Choke vs. Conventional Choke:

- Compared to a standard linear choke, the swinging choke provides superior line harmonic current reduction when the drive's output power is less than or equal to rated output. Reduces Total Harmonic Distortion (THD) emissions up to 25%.
- The effective inductance value of a swinging choke at a full load is higher than the value of a linear choke of the same physical size, weight, and cost.
- The efficiency of a swinging choke is higher than the efficiency of a linear choke of the same inductance value



WITH DISCONNECT ARRANGEMENT:

Available in Two Options:

ACS580 Drive with Input Disconnect Switch & Fast Acting Current Limiting Fuses

ACS580 Drive with Input Circuit Breaker

Disconnects are externally operable and interlocked with the enclosure door.



Vertical Wall Mount Enclosures

- Up to 25HP @ 208/240V and 60HP @ 480 and 600V
- NEMA 1 and NEMA 12 enclosed (bottom cable entry / exit)
- Provides minimum footprint advantage for use in crowded electrical rooms or mezzanines, or for direct mounting on machines or columns



Oversized Wall Mounting Enclosures

- 30 to 100HP @ 208/240V; 75 to 200HP @ 480V; and 75 to 150HP @ 600V
- NEMA 1 and NEMA 12 enclosed (top cable entry / exit with a removable conduit plate)
- Accommodates field addition of components that users frequently desire to include at these higher HP ratings



Free Standing Packages

- Available up to 100HP @ 208/240V; up to 200HP @ 480V and up to 150HP @ 600V
- Construction is sheet steel with a tough powder coat paint finish for corrosion resistance
- A 100 watt, thermostatically controlled space heater and thermostatic control of the forced ventilated cooling system are provided as standard



NEMA 3R (Outdoor) Enclosures

- Available up to 100HP @ 208/240V; up to 200HP @ 480V and up to 150HP @ 600V
- Construction is sheet steel with a tough powder coat paint finish for corrosion resistance
- A 100 watt, thermostatically controlled space heater and thermostatic control of the forced ventilated cooling system are provided as standard

NEMA3R Floor Mount



NEMA1 Wall Mount



NEMA1 Floor Mount

ACS580 Packaged Drive with Bypass

- NEMA 1 and NEMA 12: up to 100HP @ 208/240V, 400HP @ 480V and 150HP @ 600V
- NEMA 3R (outdoor): up to 100HP @ 208/240V, 200HP @ 480 & 600V
- Bypass is configured with two electrically interlocked contactors, a motor overload relay, a control power transformer with primary and secondary fusing, and a cover mounted DRIVE-OFF-BYPASS selector switch
- Includes an input circuit breaker with door mounted external operating handle (pad lockable)
- As standard - fast acting, current limiting drive input fuses

ACS880 VARIABLE FREQUENCY DRIVES

EXTENDED WARRANTY When Gerrie Commissions the Drive

ABB Emergency Technical Support

abbautomation@gerrie.com

Tel: (289) 861-5593

Features:

- Direct torque control (DTC): ABB's signature motor control technology provides precise speed and torque control.
- for all applications and virtually any type of AC motor.
- Removable memory unit: Stores all the software and parameter configurations in an easily replaceable and simple to install module.
- Wide range of safety features: Safe torque off is built-in as standard. An optional safety functions module is available, simplifying the configuration and reducing installation space.
- Intuitive human-machine interface: High-contrast and high-resolution display enabling easy navigation in multiple languages.
- Start-up and maintenance tool: Drive composer PC tool for drive startup, configuration and daily use and process tuning. PC tool is connected to the drive via Ethernet or USB interface.
- Communication with all major automation networks: Fieldbus adapters enable connectivity with all major automation networks.
- Extended connectivity: In addition to the standard interfaces, the drive has three built-in slots for additional input/output extension modules and speed feedback interfaces.
- Coated boards as standard
- Built-in choke
- Built-in braking chopper, option for frame sizes R5 to R9

Applications:

- Pumps
- Extruders
- Conveyors - Screw or Chain
- Agitators, Mixers, Grinders
- Fans
- Slurry Pumps
- Compressors
- Chippers/Shredders



Voltage Rating (VAC)	Normal Ratings				Frame Size	Part Number
	Normal Duty* Applications with 110% overload (110% I _N)		Heavy Duty Applications with 150% overload (150% I _{HD})			
	I _{2N} A	P _N HP	I _{2HD} A	P _{HD} HP		
208 - 240 VAC	4.4	1	3.7	0.75	R1	ACS880-01-04A6-2
	6.3	1.5	4.6	1	R1	ACS880-01-06A6-2
	7.1	2	6.6	1.5	R1	ACS880-01-07A5-2
	10.1	3	7.5	2	R1	ACS880-01-10A6-2
	16	5	10.6	3	R2	ACS880-01-16A8-2
	23.1	7.5	16.8	5	R2	ACS880-01-24A3-2
	29.3	10	24.3	7.5	R3	ACS880-01-031A-2
	44	15	38	10	R4	ACS880-01-046A-2
	58	20	45	15	R4	ACS880-01-061A-2
	71	25	61	20	R5	ACS880-01-075A-2
	83	30	72	25	R5	ACS880-01-087A-2
	109	40	87	30	R6	ACS880-01-115A-2
	138	50	105	40	R6	ACS880-01-145A-2
	162	60	145	50	R7	ACS880-01-170A-2
	196	75	169	60	R7	ACS880-01-206A-2
	260	100	213	75	R8	ACS880-01-274A-2

EXTENDED WARRANTY*
**When Gerrie Commissions the Drive*

Voltage Rating	Nominal Ratings				Part Number**	Frame Size***
	Normal Duty Applications with 110% overload (110% I _N)		Heavy Duty Applications with 150% overload (150% I _{HD})			
	I _N A	P _N HP	I _{HD} A	P _{HD} HP	NEMA 1 ENCLOSURE	
380 - 480 VAC	2.1	1	1.7	0.75	ACS880-01-02A1-5	R1
	3	1.5	2.1	1	ACS880-01-03A0-5	R1
	3.4	2	3	1.5	ACS880-01-03A4-5	R1
	4.8	3	3.4	2	ACS880-01-04A8-5	R1
	5.2	3	4.8	2	ACS880-01-05A2-5	R1
	7.6	5	5.2	3	ACS880-01-07A6-5	R1
	11	7.5	7.6	5	ACS880-01-11A0-5	R1
	14	10	11	7.5	ACS880-01-014A-5	R2
	21	15	14	10	ACS880-01-021A-5	R2
	27	20	21	15	ACS880-01-027A-5	R3
	34	25	27	20	ACS880-01-034A-5	R3
	40	30	34	25	ACS880-01-040A-5	R4
	52	40	40	30	ACS880-01-052A-5	R4
	65	50	52	40	ACS880-01-065A-5	R5
	77	60	65	50	ACS880-01-077A-5	R5
	96	75	77	60	ACS880-01-096A-5	R6
	124	100	96	75	ACS880-01-124A-5	R6
	156	125	124	100	ACS880-01-156A-5	R7
	180	150	156	125	ACS880-01-180A-5	R7
	240	200	180	150	ACS880-01-240A-5	R8
	302	250	260	200	ACS880-01-302A-5	R9
	361	300	302	250	ACS880-01-361A-5	R9
	414	350	361*	300	ACS880-01-414A-5	R9
500-600 VAC	9	7.5	6.1	5	ACS880-01-07A3-7	R5
	11	10	9	7.5	ACS880-01-09A8-7	R5
	17	15	11	10	ACS880-01-14A2-7	R5
	22	20	17	15	ACS880-01-018A-7	R5
	27	25	22	20	ACS880-01-022A-7	R5
	32	30	27	25	ACS880-01-026A-7	R5
	41	40	32	30	ACS880-01-035A-7	R5
	52	50	41	40	ACS880-01-042A-7	R5
	52	50	41	40	ACS880-01-049A-7	R5
	62	60	52	50	ACS880-01-061A-7	R6
	77	75	62	60	ACS880-01-084A-7	R6
	99	100	77	75	ACS880-01-098A-7	R7
	125	125	99	100	ACS880-01-119A-7	R7
	144	150	125	125	ACS880-01-142A-7	R8
	180	200	144	150	ACS880-01-174A-7	R8
	242	250	192	200	ACS880-01-210A-7	R9
	271	250	242	250	ACS880-01-271A-7	R9

NOTES:

- 1) Always select the drive based on the motor name plate current and the application.
- *2) Continuous rms output current allowing 25% overload for 1 minute every 5 minutes.
- 3) '01' within the part number indicates wall mount configuration and these drives come with conduit box as standard.
- 4) NEMA 12 enclosed drives are available on request.
- 5) Control panel mounting kit for the remote mounting of keypad is available from accessories on page 67.
- 6) Flange mounting kits available optionally allows mounting of heatsink externally to a 3rd party enclosure (NEMA1 & NEMA12). Please refer page 67.

ACS880 VARIABLE FREQUENCY DRIVES

DIMENSIONS & WEIGHT:

Frame Size	R1	R2	R3	R4	R5	R6	R7	R8	R9
	mm	mm	mm	mm	mm	mm	mm	mm	mm
H1	405	405	471	573	730	726	880	963	955
H3	370	370	420	490	596	569	600	681	680
W	155	155	172	203	203	251	284	300	380
D	226	249	261	274	274	357	365	386	413
Weight (kg)	6	8	10	18.5	23	45	55	70	98

NOTES: 1. H1>>Height with cable entry box. 2. H3>>Height without cable entry box. 3. Width and Depth with cable entry box.

CONTROL PANEL

Connecting multiple drives to a control panel

- Connect the control panel (a) to the first drive (b) on the panel link.
- Connect the first drive (c) to the second (d), the second to the third and so on.



ACS880 VARIABLE FREQUENCY DRIVES—ACCESSORIES

CONTROL PANEL MOUNTING KIT

PART NUMBER: DPMP-01

Panel flush mounting kit (with 3m CAT5 cable, DDPI board, No panel). **NEMA12 / NEMA3.**

PART NUMBER: DPMP-02

Panel surface mounting kit (with 3m CAT5 cable, No panel). **NEMA4X.**

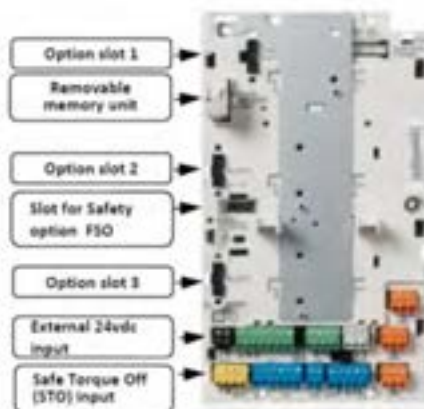
FLANGE MOUNTING KITS

The flange mounting kit contains brackets for attaching the drive onto a mounting plate so that the heat sink of the drive is in the cooling air channel and the front part on the other side of the mounting plate. It is compatible with both UL type 1 and UL type 12 ACS880-01 drives.

Frame Size	Field Kit Code	Frame Size	Field Kit Code
R0-R1	3AXD50000031456	R6	3AXD50000018852
R2	3AXD50000031457	R7	3AXD50000018853
R3	3AXD50000031458	R8	3AXD50000018854
R4	3AXD50000031460	R9	3AXD50000018855
R5	3AXD50000031461		

ACS880 VARIABLE FREQUENCY DRIVES—OPTIONS

The ACS880 control unit; standard I/O and common options



- **FEA-03 F-series extension adapter**
- Each extension module has two (2) I/O slots.
- Up to 3 FEA-03 modules can be connected to a single ACS880.
- Requires FDC0-0x adapter and fiber optic cables.
- Only FEN I/O extension modules and FEN encoder modules can be mounted on FEA-03.
- Note: Does not increase the maximum absolute number of I/O or encoder cards that can be connected to drive.



Standard I/O set

- 2 analog inputs, 2 analog outputs
- 6 digital inputs, 3 relay outputs
- 1 digital input interlock
- 2 digital inputs/outputs (freely programmable)
- External 24V power input
- Safe Torque Off (STO, SIL3/PLe) input
- Removable memory unit

Extension I/O modules available

Location	Digital inputs (DI)	Digital I/Os (DIO)	Analog inputs (AI)	Analog outputs (AO)	Relay outputs (RO)
Control unit	6 + DIL	2	2	2	3
FIO-01	—	4	—	—	2
FIO-11	—	2	3	1	—
FAIO-01	—	—	2	2	—

- Three(3) I/O extension modules can be installed simultaneously.

Speed Feedback modules

- HTL incremental encoder
- TTL incremental encoder*
- Resolver + TTL encoder
- SinCos absolute encoder + TTL encoder
- Drive can accommodate two encoder modules installed in any of the three (3) option slots.

FieldBus Adapter modules

- Devicenet
- EtherNet IP
- Profinet
- Profibus
- ControlNet
- Drive can accommodate two fieldbus adapters installed simultaneously (slot 1 and 2)
- Modbus TCP
- Modbus RTU
- Powerlink
- EtherCAT

DDCS Fiber Optic network adapter module

- One (1) FDC0-0x fiber optic adapter module can be installed in any of the three(3) option slots.

Safety Functions Option module (FSO)

- The safety functions module (FSO) has its own connector. In frame sizes R1-R5, the module occupies Option slot 2.
- In frame sizes R6-R9, the module is mounted in dedicated mounting hole and does not occupy Option slot 2.
- Only one (1) safety functions module (FSO) can be installed.

ACS880 VARIABLE FREQUENCY DRIVES—CABINET VERSION



ACS880-07 is a Cabinet drive available from 100HP-700HP@480V and 100HP-700HP@600VAC. Standard delivery (Canadian version +C1xx) includes; cabinet-installed drive, IP22 (UL Type 1) or IP55 (UL Type 12) optional, main switch disconnecter (switch fuse with UL/CSA fuses), Ready, Run, Fault pilot lights, Cable markings class A3, ACS-AP-I assistant control panel, EMC filter optional, AC or DC choke (depending on drive size), coated boards, ACS880 primary control program, Safe torque off function, bottom entry and exit of cables, circuit diagrams, USB memory stick containing all manuals. All components UL/CSA listed/recognized. **Higher Powers and configurations are available upon request.**

ACH580 VARIABLE FREQUENCY DRIVES FOR HVAC APPLICATIONS

(Disconnect and Bypass Packages are available)

Two Year Warranty

When Gerrie commissions the drive

ABB Emergency Technical Support

abbautomation@gerrie.com

Tel: (289) 861-5593

Features:

- UL/cUL/CSA Approved
- Complete with swinging choke – reduces harmonics, cost of energy and size/weight
- Pre-programmed HVAC application macros
- BACnet Compatible; N2, FLN & Modbus field-buses are embedded into the memory of the drive
- Built-in timers and EMI/RFI filters
- Two PID controllers as standard
- Detachable advanced control panel for easy programming, copying/downloading parameters to other drives
- Start-up/Maintenance/Diagnostic Assistants for fast set up and eliminating or reducing down-time

Applications:

- Cooling Tower Fans
- Supply and Return Fans
- Booster Pumps
- Condensers



HP	208-240 VAC			380-480 VAC			500-600VAC		
	Amps	Part Number	Frame	Amps	Part Number	Frame	Amps	Part Number	Frame
1	4.6	ACH580-01-04A6-2	R1	2.1	ACH580-01-02A1-4	R1	-	-	-
1.5	6.6	ACH580-01-06A6-2	R1	3.0	ACH580-01-03A0-4	R1	-	-	-
2	7.5	ACH580-01-07A5-2	R1	3.5	ACH580-01-03A5-4	R1	2.7	ACH580-01-02A7-6	R2
3	10.6	ACH580-01-10A6-2	R1	4.8	ACH580-01-04A8-4	R1	3.9	ACH580-01-03A9-6	R2
5	16.7	ACH580-01-017A-2	R1	7.6	ACH580-01-07A6-4	R1	6.1	ACH580-01-06A1-6	R2
7.5	24.2	ACH580-01-024A-2	R2	12	ACH580-01-012A-4	R1	9.0	ACH580-01-09A0-6	R2
10	30.8	ACH580-01-031A-2	R2	14	ACH580-01-014A-4	R2	11	ACH580-01-011A-6	R2
15	46.2	ACH580-01-046A-2	R3	23	ACH580-01-023A-4	R2	17	ACH580-01-017A-6	R2
20	59.4	ACH580-01-059A-2	R3	27	ACH580-01-027A-4	R3	22	ACH580-01-022A-6	R3
25	74.8	ACH580-01-075A-2	R4	34	ACH580-01-034A-4	R3	27	ACH580-01-027A-6	R3
30	88	ACH580-01-088A-2	R5	44	ACH580-01-044A-4	R3	32	ACH580-01-032A-6	R3
40	114	ACH580-01-114A-2	R5	52	ACH580-01-052A-4	R4	41	ACH580-01-041A-6	R5
50	143	ACH580-01-143A-2	R6	65	ACH580-01-065A-4	R4	52	ACH580-01-052A-6	R5
60	169	ACH580-01-169A-2	R7	77	ACH580-01-077A-4	R4	62	ACH580-01-062A-6	R5
75	211	ACH580-01-211A-2	R7	96	ACH580-01-096A-4	R5	77	ACH580-01-077A-6	R5
100	273	ACH580-01-273A-2	R8	124	ACH580-01-124A-4	R6	99	ACH580-01-099A-6	R7
125	-	-	-	156	ACH580-01-156A-4	R7	125	ACH580-01-125A-6	R7
150	-	-	-	180	ACH580-01-180A-4	R7	144	ACH580-01-144A-6	R8
200	-	-	-	240	ACH580-01-240A-4	R8	192	ACH580-01-192A-6	R9
250	-	-	-	302	ACH580-01-302A-4	R9	242	ACH580-01-242A-6	R9
250	-	-	-	-	-	-	271	ACH580-01-271A-6	R9
300	-	-	-	361	ACH580-01-361A-4	R9	-	-	-
350	-	-	-	414	ACH580-01-414A-4	R9	-	-	-

NOTE:

1. Always select the drive based on the motor name plate current and the application.
2. For the dimensional details, please refer to dimension chart page 65.

ACH580 VARIABLE FREQUENCY DRIVES—PACKAGED DRIVES

E-CLIPSE BYPASS

Features:

- UL/cUL/CSA Approved
- Intelligent – Microprocessor Based Advanced Features with UL Listed Motor Overload Protection
- Bypass Serial Communications: First in the Industry to have BACnet MS/TP, Modbus & N2 protocols on board allows to go to bypass mode with no failed point on the communication network
- Single Phase Protection for motor – VFD and Bypass
- Stand Alone Operation: Serial communications still active, even with VFD removed allows supervisory control of application in bypass mode & monitor Volts, Amps, KWHrs and much more – even in bypass mode

VERTICAL BYPASS



1-25 HP 208V / 1-60 HP 460V / 2-30 HP 600V

This configuration incorporates a cost & space saving design where the VFD and Bypass are assembled vertically. When wall space is at a premium, this is the ideal configuration. This option is available in a Type 1 enclosure only.

UL Type 1 Enclosure

Plenum Rated

Main Circuit Breaker or Disconnect (Door Interlocked, Padlockable)

Dedicated, Drive-only Input Fuses with Disconnect option

Damper Control and Fireman's Override

Optional AC Line Reactor, Communications Modules

INPUT DISCONNECT/BREAKER



1-100 HP 208V / 1-350 HP 460V / 2-150 HP 600V

This configuration provides a means of disconnecting power to the drive system by either using a door interlocked, padlockable disconnect switch and fast-acting fuses or circuit breaker.

- **UL Type 1 or UL Type 12 Enclosure**
- **Plenum Rated**
- **Optional AC Line Reactor, Communications Modules**

ACH580 AC DRIVES—ACCESSORIES AND OPTIONS

DOOR MOUNTING KIT

PART NUMBER: DPMP-EXT

The door mounting kit is ideal for cabinet installations. The protection class is UL (NEMA) type 12 / IP65 when panel is mounted, UL (NEMA) type open / IP20 when panel is not mounted.

OPTIONS:

OPTION CODE (Factory installed option)	DESCRIPTION	PART # (Field installed option)
Protection Class		
B056	UL Type 12 (IP54) For ACH	--
B058	UL Type 3R	--
Fieldbus Adapter Modules		ACH

- Lonworks
- Profibus/DP
- Devicenet
- Ethernet/IP
- BacNet IP

Embedded : Johnson Controls N2, Modbus RTU, BACnet (MS/TP)

NOTE: For the factory installed options, add the above mentioned 4 digit option code using '+' after the order code for the drive. For the field installed options, order it as a separate item using the above mentioned part number.

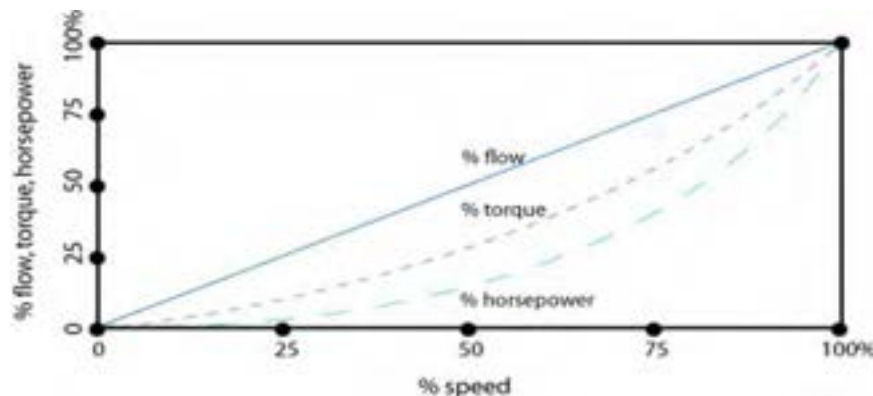


ENERGY SAVINGS WITH VARIABLE FREQUENCY DRIVES AND INVERTER DUTY MOTORS

The typical HVAC system is designed with a peak load condition in mind. However, since it is not uncommon for these systems to be running at a reduced load throughout most of the year, flow control mechanisms such as dampers, valves and inlet guide vanes are often used. While these methods are able to control the output flow of the system, they waste a lot of energy; the system is still running at the same capacity while the output flow is managed and diverted.

Controlling the output of the HVAC system itself can directly lead to significant energy savings. It is evident from the **Affinity Laws** which state relationships between HP, Flow, and Torque i.e.

- **Flow is proportional to speed**
- **Pressure (Torque) is proportional to speed squared**
- **Power (HP/kW) is proportional to speed cubed**



As a result of these relationships, we can see that a small reduction in the required airflow implies a large reduction in horsepower. In fact, running 2 motors at half speed requires less energy than running 1 motor at full speed.

APPLICATIONS FOR THE VARIABLE FREQUENCY DRIVES IN THE HVAC INDUSTRY

CENTRIFUGAL FAN: Centrifugal fans are often used to produce the air flow in HVAC systems, and two common methods of controlling this flow are discharge dampers and inlet guide vanes. While both of these are excellent ways of controlling the output of the HVAC system, they have a much higher energy requirement than an equivalent solution involving variable frequency drives. From the above diagram outlining the required horsepower as a function of the required air flow, you can see, the variable speed drive solution offers the greatest energy savings.

CENTRIFUGAL PUMP: The most common method of controlling the flow from a centrifugal pump is through the use of a throttling valve. From the above diagram outlining the required horsepower as a function of the required air flow, you can see, the variable speed drive solution offers the greatest energy savings.

COOLING TOWER: Cooling towers are used to lower the temperature of water for use in HVAC systems. This is done by blowing air across condenser water in order to transfer the heat out of the water and into the air. However, to achieve the correct amount of cooling, the centrifugal fan (which is used to blow the air) is cycled on and off according to the demand. This results in a poor use of energy, and a large increase on the mechanical stress experienced by the motor. By using a variable frequency drive, the centrifugal fan is able to run at a rate appropriate for the given demand. This results in a significant energy savings, as we discovered above.

ENERGY SAVINGS COST COMPARISON—VARIABLE FREQUENCY DRIVES AND INVERTER DUTY MOTORS

Affinity Laws:

- **Flow** is proportional to **Speed**
- **Pressure** (Torque) is proportional to **(Speed)²**
- **Power** (HP/kW) is proportional to **(Speed)³**

From the Affinity Laws stated above, power consumed is proportional to cube of rated speed on variable torque loads. e.g. Centrifugal Fan/Pump/Blower

Example I:

50HP Motor running at 50% of nominal speed through VFD control will consume power equal to 6.25HP i.e. $50\text{HP} \times 0.5 \times 0.5 \times 0.5 = 50\text{HP} \times 0.125$ (12.5%) = 6.25HP, i.e. 87.5% savings

Cost to run a 50HP (37kW) motor per year = 37 kWatts x 365 days x 24 hrs x 0.10 c/kW-h x 0.95 efficiency = \$30,791.40

Say \$30,000 ... (A)

Summary: Savings = 87.5% of (A) = $0.875 \times \$30,000 = \$26,250$

Example II:

50HP Motor running at 80% of nominal speed through VFD control will consume power equal to 25.6HP i.e. $50\text{HP} \times 0.8 \times 0.8 \times 0.8 = 50\text{HP} \times 0.512$ (51.2%) = 25.6HP, i.e. 48.8% savings

Cost to run a 50HP (37kW) motor per year = 37 kWatts x 365 days x 24 hrs x 0.10 c/kW-h x 0.95 efficiency = \$30,791.40

Say \$30,000 ... (A)

Summary: Savings = 48.8% of (A) = $0.488 \times \$30,000 = \$14,640$

Note:

Using Energy Savings Estimator software, Gerrie Electric will be pleased to submit Energy Savings Reports for your project(s).

ENERGY SAVING WITH VARIABLE FREQUENCY DRIVES

FACT

ABB's installed base of variable-speed drives have now save customers enough energy to serve a country of five million people, eliminating nearly 100 million tons of carbon dioxide emissions every year.

More than 65% of electrical energy consumed in industry is by the electric motor. Governments worldwide are realizing the need to encourage more effective use of motors with electrical variable speed drives.

It is evident from the Affinity Laws which state relationships between HP, Flow, and Torque; that 20% reduction in flow can result in approximately 50% reduction in horsepower for centrifugal loads like blower, fan, and pump.



ENERGY SAVING ESTIMATING TOOLS

ABB has developed software tools such as Energy Savings Estimator, PumpSave and FanSave for accessing the saving potential in different motor applications. PumpSave and FanSave have been essentials in the plant or design engineer's toolbox for more than a decade.

PumpSave is a calculation tool used to estimate the energy savings available when using a variable speed AC drive compared to other pump control systems. Comparisons are made with throttling control, ON/OFF control and adjustable speed control using a hydraulic or other type of slipping drive.

FanSave is a calculation tool used to estimate the energy savings available when using a variable speed AC drive compared to other fan control systems. Comparisons can be made with damper control, pitch control, single speed vane control and 2-speed vane control.



ENERGY APPRAISAL SCHEME

ABB has devised an Energy Appraisal Scheme that can rapidly determine just where and how much energy can be saved.

REPLACEMENT DRIVE SCHEME

If you have had drives installed for more than five years, you could save even more energy by replacing them with the latest technology drives. ABB's Replacement Drive Scheme offers you a turnkey solution for replacing drives, giving minimum plant disruption.

AC drives reduce energy wastage by changing the motor speed. This saves energy because the motor does not use more electrical energy than required.



ACQ580 VARIABLE FREQUENCY DRIVES FOR PUMPING IN WATER AND WASTE WATER APPLICATIONS

Features:

- UL/cUL/CSA Approved
- Complete with swinging choke – reduces harmonics, cost of energy and size/weight
- Pre-programmed pumping application macros
- Built-in timers and EMI/RFI filters
- Two PID controllers as standard
- Detachable advanced control panel for easy programming, copying/downloading parameters to other drives
- Start-up/Maintenance/Diagnostic Assistants for fast set up and eliminating or reducing down-time
- Specialized software features for pump control

ABB Emergency Technical Support

abbautomation@gerrie.com

Tel: (289) 861-5593

Built-in pump application software

The built-in pump application software in the ACQ580 drives is designed to enhance the reliability and durability of the water and wastewater application in which it is used. The functions protect the pump and secure its optimal functionality, increasing cost efficiency. The built-in functionalities also support the user in securing the flow of the water and wastewater in the pump solution.



Multi-pump functionality

The function maintains stable process conditions for several parallel pumps (up to 8 pumps at the same time)

operating together. It is possible to optimize the speed and number of pumps needed when the required flow or pressure rate is variable. This built-in functionality ensures continuous operation for multipump systems even if one or more pumps fails or requires maintenance.



Sensorless flow calculation

Measures the amount of water flowing without the need for external sensors. This will enable you to reduce costs as there is no need for setting up and using additional sensors or back up the flow meters to avoid interruptions in the process.



Level control

Control the filling or emptying of wastewater storage and water tower tanks. Level control can be used within a station controlling up to eight pumps. The level control function has varying pre-set water levels and the pumps will start and stop based on measured level. This method allows the pumps to run at an efficient speed and ensures the pump sump does not become over contaminated by sediment.



Soft pipe fill

The soft pipe fill function manages the pressure of water by filling the pipeline with a gentle approach. This helps to avoid sudden pressure peaks and reduces the risk of water hammer which can cause damage to the water pipes.



Quick-ramp

Protect bearings when a submersible pump is started without water. Quick ramp allows your pump to reach optimal speed to extend pump life, ensure operation and prevent unplanned outages.



Pump cleaning

Keeps the impeller of the pump clean by running a sequence of aggressive ramps between minimum and maximum pump speed.



Turbidity reduction

When a pump starts as slow as possible, it creates the lowest turbidity values for the water being moved or extracted. When you combine quick ramps and long normal ramps, the drive will protect and run submersible pump most optimal way.



Pump protection

The built-in protection functionalities ensures that pumps can operate at the best possible conditions. The maximum pressure protections help to protect the pump and the system in case of a blockage in the pipeline. In case of a pipe rupture, the minimum pressure protection can generate an alarm or fault or can be programmed to run at certain speed to avoid dirty water entering the pipeline. The inlet pressure protection can help to avoid cavitation, when the inlet pressure of a water pump falls below pump design specifications, tiny vapor bubbles form. These bubbles collapse when they meet the impeller, causing shock waves and points of high temperature that can corrode the surface of the impeller.



Dry run protection

This function prevents the pump from running dry. The water pump shaft and impeller are rotating at fast rates. If there is no dry pump protection, the released heat can damage the pump over time, limiting its lifetime.

ACH580 VARIABLE FREQUENCY DRIVES ENERGY SAVINGS ESTIMATING INFORMATION FORM

Customer

Contact	Company	Address	City, Postal Code
Phone	Cell	Fax	Email

Operation Data

Hours per Day of Operation (Hours)	Days per Week of Operation (Days)
Weeks per Year of Operation (Weeks)	Cost per kWh (Cents)

Application (Please select current control method)

Fan: No Speed Control ☐ Outlet Damper Control ☐ Inlet Vane Control ☐

Pump: No Speed Control ☐ Throttling Valve Control ☐

AC Motor Data

Motor Horsepower (HP)	Motor Voltage (V)	FLA (A)	Motor Efficiency (%)
-----------------------	-------------------	---------	----------------------

Duty Cycle

Flow (%)	Time (%)
100%	
90 %	
80 %	
70 %	
60 %	
50 %	
40 %	
30 %	
20 %	
10 %	
0 %	

For Gerrie Electric Use

Account Manager	
Branch Name	
Date	



VARIABLE FREQUENCY DRIVES APPLICATION AND QUOTATION

Customer Information:

Contact:	Company:	Address:	City, Postal Code:
Cell Phone:	Telephone:	Fax:	E-mail:

Motor Information:

kW/HP:	Voltage:	Phase:	Frequency:	RPM:	FLA/Amps.:
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Drive Input Information:

Voltage:	Phase:	Frequency:
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Application (e.g. Centrifugal Fan, Mixer, Conveyor, Induced Draft Fan, Centrifugal Pump):

Special Requirement(s):

Start-up (Please X either box) Installation not included:

By Customer: ☐

By Gerrie Electric: ☐

For GERRIE ELECTRIC Use:

Suggested Drive Make, Model & Part No:

Account Manager:

Branch Name:

Date:



Motor Questionnaire

General	Motor HP : If existing motor - picture of the nameplate					
	RPM (900, 1200, 1800, 3600) :					
	Voltage (115, 230, 460, 230/460, 575) :					
	Phase (1 phase, 3 phase) :		1 phase		3 phase	
	Mounting - foot or flange (C or D) : Foot mount is normal and C flange is typical flange		Foot		Flange	
			C-Flange		D-flange	
	Enclosure (ODP or TEFC) :		ODP		TEFC	
	Application :					
	Service Factor : typically 1.15-DOL 1.0-VFD					
	VFD Related	ON VFD or across the line (DOL) or Both:		VFD		DOL
Variable Torque (Centrifugal Fan or Centrifugal Pump) :		VT		CT		
Constant Torque (Conveyor, Crusher, Extruder, etc) :						
Speed Range (10:1 VT / 4:1 CT typical) :						
Distance to the motor from VFD : Long distances can cause insulation / bearing failure						
Others	Safe or Hazardous area :		Safe		Hazardous	
	Classification (Class 1 Div 2 or Zone 2) :					
	Groups (A,B,C,D or IIA, IIB, IIC) :					
	Any special options required :					
	VFD Output filter :		Yes		No	
	VFD Input reactor :		Yes		No	
Motor Shaft Grounding Brush :		Yes		No		
Motor Space heaters :		Yes		No		
Others :						

MOTORS (BALDOR—A DIVISION OF ABB)

MORE MOTORS ARE AVAILABLE ... HERE ARE A FEW TYPES ...

NEW

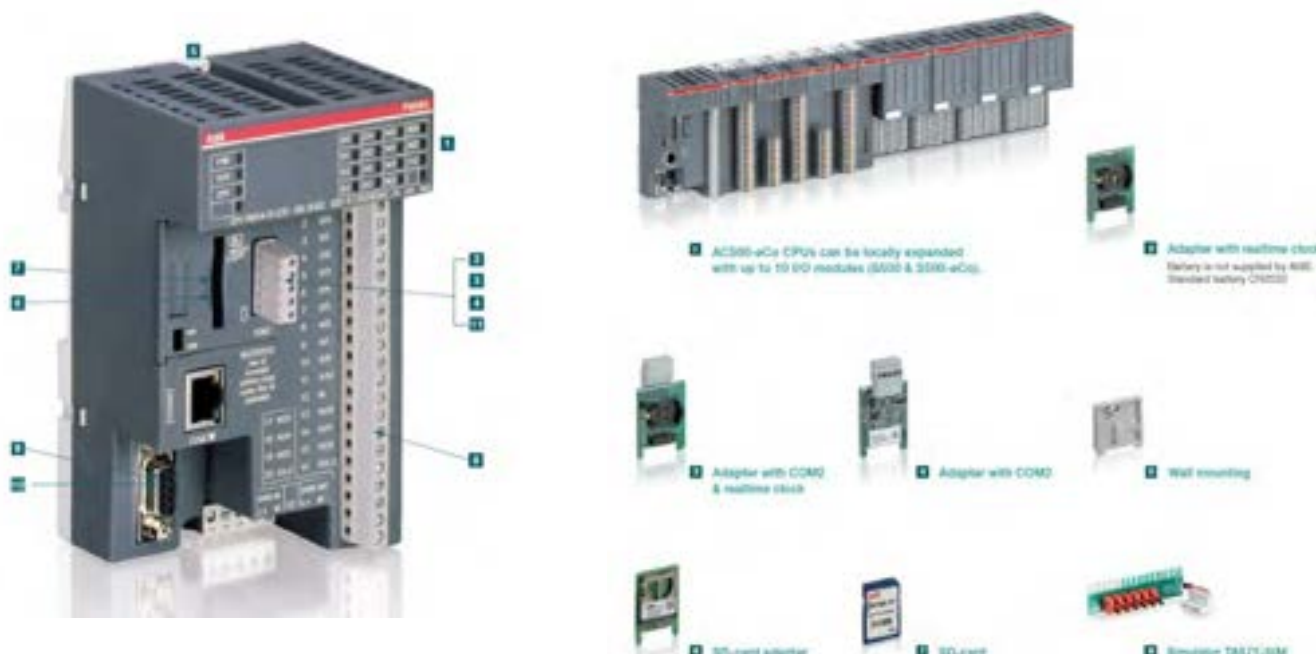
GENERAL PURPOSE MOTORS – TEFC	
	• TENV & TEFC 1/12 – 15HP • ODP 1/6 – 10HP • C-face – with and without base, D-flange • 50Hz and 50/60Hz available • Designed for longevity with a 3 year warranty on premium efficient Super-E Motors • Suitable for inverter use per NEMA MG1 Part 31.4.4.2
GENERAL PURPOSE MOTORS – ODP	
	• TENV & TEFC 1/8 – 1500HP • 200, 230/460, 460, 575VAC • C-face – with and without base, D-flange • 50Hz and 50/60Hz available • Designed for longevity with a 3 year warranty on premium efficient Super-E Motors • Suitable for inverter use per NEMA MG1 Part 31.4.4.2
SEVERE DUTY MOTORS	
	• TENV & TEFC 1/2 – 3000HP • 200, 230/460, 460, 575, 690, Medium Voltage AC • Robust cast iron construction • C-face – with and without base, D-flange • Division 2 / Zone 2, Class 1, Groups A,B,C,D • IEEE Std. 841-2009 • Severe Duty and motors marked with inverter speed range • Design D (High slip) Oil Field Pump Motors 3 – 150HP • Inverter ready nameplate
WASH DOWN DUTY MOTORS	
	• TENV & TEFC 1/4 – 20HP • 200, 230/460, 460, 575VAC • Standard mounting and C-face – with and without base • White washdown, paint-free, stainless and SSE Encapsulated stainless designs • Feather pickers • 56J and Close-Coupled pump models available • Custom IEC available • 50Hz and 50/60Hz available

FARM DUTY MOTORS	
	Single and Three Phase High torque designs Premium efficient designs Grain Dryers; Grain Augers; Irrigation Tower Drive; Aeration Fan; Dairy Vacuum Pump; Poultry Feed Auger Drive; Metering Pump 115/230, 200, 230/460, 460, 575 VAC 50Hz and 50/60Hz available
RPM XE MOTORS	
	TEFC, severe duty, Design B, 1.15SF Efficiency two or four levels above NEMA premium Power dense and standard NEMA frame sizes Designed for across the line operation Suitable to adjustable frequency power in scalar mode UP to IE3 combined system efficiency when properly matched with VFD Operates at true synchronous speed regardless of load
INVERTER / VECTOR MOTORS	
	TEFC & TEBC 1/3 – 1500HP TEFC V*S Master 1/3 – 1500HP Washdown motors ½ - 10HP Explosion proof ½ - 75HP Designed for adjustable frequency power and complies with MG1-part 31 Turn Down Ratio of 1000:1 Constant Torque with provision for encoder mounting Class H insulation
INVERTER / VECTOR MOTORS – LAMINATED FRAME	
	TEFC & TEBC 5 – 1200HP – with or without feedback Interior Permanent Magnet 10 – 1500HP Custom NEMA and IEC Motors available TENV 2 – 100HP TEFC 7 1/2 – 200HP TEBC 5 – 500HP DPFV 5 – 1,200HP

AC 500-ECO PLC

Features:

- Scalable flexibility with the entire AC500 PLC family
- More user memory (128KB) than any comparable system on the market today
- Tried and tested CoDeSys programming environment across entire AC500 family
- Integrated serial interface parameterizes as Modbus Master/Slave, second serial port as an option
- Economical, cost effective concept
- More speed, program processing time of 0.1µs/instruction
- Advanced simulation mode allows program to be debugged w/o PLC hardware, reducing on-site testing req.
- Options such as Real Time Clock, SD card, programming cables etc. available
- One time buy life upgrade software package all in one ABB Control Suit, PLC, Drives, Panels and more



S500 INPUT/OUTPUT MODULES



- Universal Hardware, customized by software
Analog: U, I, PT100...
Digitals: input, output, counter
Function modules: PWM, interrupt, frequency counter...
- Same fieldbus interface module for different field busses
- Same terminal unit for digital and analog I/Os
- Same I/O modules for central and distributed systems
AC500 CPU: up to ten I/O modules
AC500-eCo CPU: up to seven I/O modules
Fieldbus module: up to seven I/O modules
- Pre-wiring without I/O module

AC500 PLC

Features:

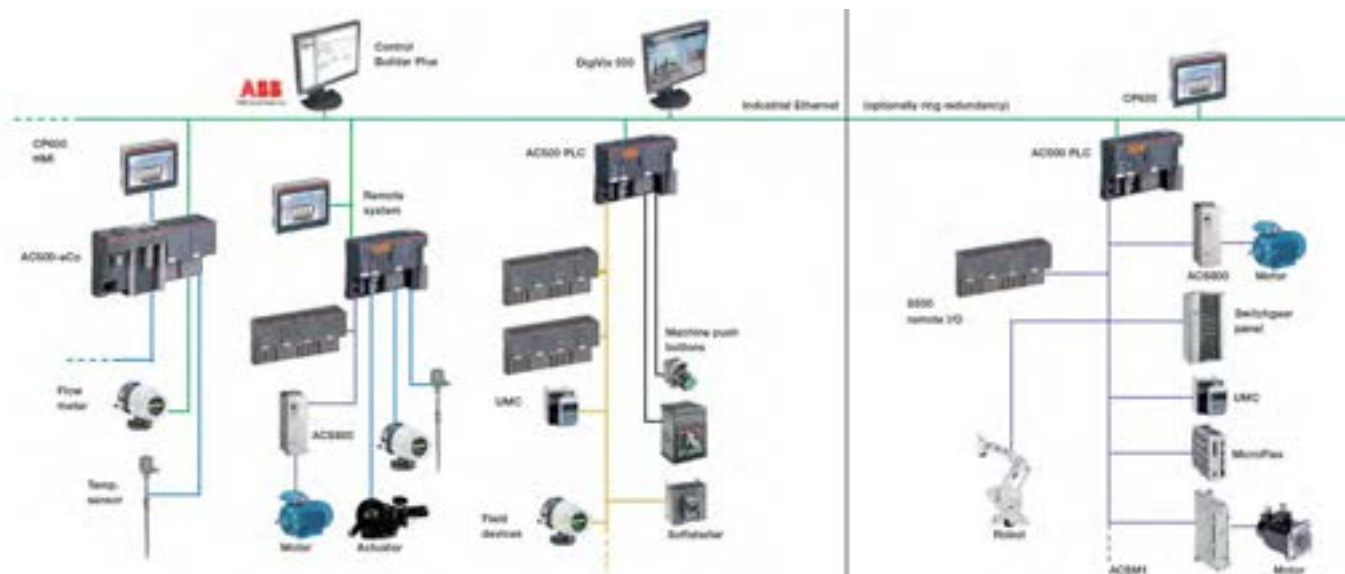
- Scalable control
- Wide choice of communication and field bus modules
- User-selectable coupler types for simultaneous operation
- Fast replacement thanks to plug-in modules
- A single software package for the entire range
- Seamless integration of control system and field devices
- Attractive price-performance ratio
- Extreme condition -30 +70 operational temperature , -40 reliable start
- Increased resistance to 95% humidity and salt mist
- Extended immunity to hazardous gases



AC500 can be a communication hub with the following protocols.



NOTE: Maximum of 4 protocols can be installed in 1 base + optional Ethernet on CPU



PANELS (TOUCH SCREENS)

CP600-eCo and CP600 Key features



CP600-eCo Control Panels			
Display Size	Resolution	Type	Part Number
4.3"	480x272	CP604	1SAP504100R0001
7.0"	800x480	CP607	1SAP507100R0001
10.1"	1024x600	CP610	1SAP510100R0001

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For additional information on the products and delivery, contact your local branch. Page | 81



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The One Stop Shop

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Kitchener, Ontario
N2C 1L4
Tel: (519) 893-1932

CAMBRIDGE

890 Langs Drive
Cambridge, Ontario
N3H 5R8
Tel: (519) 740-2912

GUELPH

31 Arrow Road
Guelph, Ontario
N1K 1S8
Tel: (519) 823-8442

LONDON

1183 Frances Street
London, Ontario
N5W 2L9
Tel: (519) 659-1234

LONDON HYDE PARK

6-2018 Mallard Road
London, Ontario
N6H 5L8
Tel: (519) 641-4321

ST. THOMAS

156 Edward St. Unit 3
St. Thomas, Ontario
N5P 1Z3
Tel: (519) 633-1400



ALLISTON

1-A Alderson Ct., Units 1 & 2
Alliston, Ontario
L9R 2B7
Tel: (705) 434-9229

MISSISSAUGA

1036 Matheson Blvd. E
Mississauga, Ontario L4W 2T9
Tel: (905) 625-3118

WOODSTOCK

1229 Seagrave Road
Woodstock, Ontario
N4T 0A8
Tel: (519) 539-4789

FOR EMERGENCY TECHNICAL SUPPORT

PLEASE CALL OUR NEW

GERRIE/ABB TECH SUPPORT LINE

(289) 861-5593