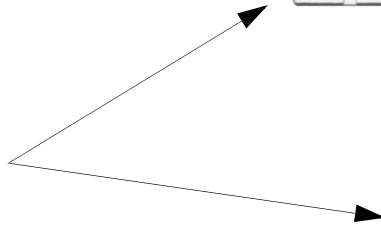




# 1336 PLUS/PLUS II to a PowerFlex 70 (w/Enhanced Control) or PowerFlex 700 (w/Vector Control)



Rockwell Automation's Technical Representatives and highly trained Distributor Drives Specialists will help you transition to the New, World-Class PowerFlex 70 or 700 AC Drive.

# Specifications and Features

Drive Model	1336 PLUS	1336 PLUS II	PowerFlex 70	PowerFlex 700		
Catalog Number	1336S-xxxxx	1336F-xxxxx	20A-xxxxxx	20B-xxxxxxx		
Power Ratings	120V	N/A	N/A			
	240V, 1-Phase	Derate by 50%		Derate by 50%		
	240V, 3-Phase	0.5-125 HP (0.4-93 kW)		0.5-100 HP (0.37-55 kW)		
	480V	0.5-600 HP (0.4-447 kW)		0.5-700 HP (0.37-500 kW)		
	575V	1-600 HP (0.75-447 kW)	2-600 HP (0.75-447 kW)	0.5-50 HP (0.37-37 kW)	1-150 HP (0.75-132 kW)	
	Normal Duty Overload					
	Continuous	100%		100%		
	1 Minute	150%		110%		
	3 Seconds	200%		150%		
	Heavy Duty Overload					
	Continuous	N/A		100%		
	1 Minute	N/A		150%		
	3 Seconds	N/A		200%		
	Specifications	Frequency Control	400 Hz Max		500 Hz Max	420 Hz Max
		PWM Frequency	2-8 kHz		2 -12 kHz	2 -10 kHz
Enclosures Types		Open, Type IP21, Type 12/4X IP54/65 A-F frames heatsink out the back		IP21, NEMA/UL Type 1 IP66, NEMA/UL Type 4X/12, and Flange	Open, NEMA/UL Type 0 Heatsink Out the Back: Fr 5-10 (heatsink IP54, NEMA/UL Type 12) IP20, NEMA/UL Type 1 IP54, NEMA/UL Type 12 Fr 5/6	
Ambient Temp (Typical)		0-50°C (Open Type)		50° C (Type 1 and Flange), 40°C (Type 4X/12)	IP20/Open: 50° C (Fr 0-6) 40° C (Fr 7-10) NEMA/UL Type 1: 40° C	
Torque Control						
Open Loop Accuracy		N/A		10%	5%	
Closed Loop Accuracy		N/A		5%	2%	
Speed Control						
Open Loop Accuracy		0.50%		0.1%		
Closed Loop Accuracy		0.10%		0.001%		
HP with DC Link Choke		7.5-600 HP		7.5-50 HP	0.5-875 HP	
HP with AC line choke		N/A		N/A		
Volt Tolerance		±10%		±10%		
Frequency Tolerance		47-63 Hz		47-63 Hz		
Compliance Marks		CE, UL, cUL, C-Tick		CE, UL, cUL, C-tick, and TUV, NSF (Type 4X/12)	All: UL, ATEX, cUL Frm. 0-6: CE, CSA, SEMIF47, RINA	
Maximum Altitude	1000m		1000m (without derating)			

# Specifications and Features *(continued)*

Drive Model	1336 PLUS	1336 PLUS II	PowerFlex 70	PowerFlex 700
<i>Catalog Number</i>	1336S-xxxxx	1336F-xxxxx	20A-xxxxxxx	20B-xxxxxxx
<b>Hardware</b>	EMC Filtering	External-3ø		Internal - 2nd Environment (Fr 0-6)
	Heatsink Out the Back	Frames A-F		Yes, Frames 5-10
	Zero Stacking	No		Yes
	Internal DB Transistor HP	No		1/2-50 HP (60-200 HP Option)
	Internal DB Resistor Option HP	No		1/2-30 HP (1/2-25 HP)
	Encoder Input Standard	Option Card		Option
	Additional Feedback Options	No		Incremental (5V/12V)
	Number of Comms. Supported Simultaneously in Drive	1		1
	Removable MOV to Ground	No		Yes
	Safe-Off	No		Option (No)
Max. Short Circuit Rating	200,000A	200,000A	200,000A	200,000A
<b>Inputs/Outputs</b>	Standard Discrete Inputs	(9) 115V, 24V source, 5V sink (Input Selections)	(9) 115V, 24V source, 5V sink (5 - fully prog.)	(6) 24V (6) 24V DC or 115V AC sink/source
	Analog Inputs	(2) unipolar 0-10V or 4-20 mA	(3) unipolar 0-10V or 4-20 mA	(2) bipolar (2) bipolar, ±10V or 0-20 mA
	Discrete Outputs	(4) Form C Relays		(2) Prog Form C Relays (3) Prog (1-Form C, 1-Form B, 1-Form A). (1) dedicated drive fault (Fr 7-10)
	Analog Outputs	(1) Unipolar (0-10V or 4-20 mA)	(2) Unipolar (0-10V)	(1) Bipolar, ±10V or 4-20 mA, (1) Unipolar 0 to 10V or 4-20 mA (2) Bipolar ±10V or 0-20 mA
	Pulse Output	Yes	Option Card	No
	Optional I/O Voltage	115V, 24V, 5V		115V (24V DC/115V AC)
	PTC Input	No	Option Card	No (Yes)
	Encoder Input	Yes		Differential Dual Channel
	Pulse Input	Option Card		Yes (with encoder option)
	Additional I/O	No	Yes	No
	Input Timer / Counter Functions	No		No
	Output Timer / Counter Functions	No		No
	Encoder Output	Pulse Output		No

# Specifications and Features *(continued)*

Drive Model	1336 PLUS	1336 PLUS II	PowerFlex 70	PowerFlex 700	
<i>Catalog Number</i>	1336S-xxxxx	1336F-xxxxx	20A-xxxxxxx	20B-xxxxxxx	
<b>Input/Output Specifications</b>	Digital Input Scan Time (Not Through Put Time)	10 ms		2 ms	500 μs
	Analog Input Resolution	10 Bit		±10V DC & 0-20 mA 10 Bit Plus Sign	±10V DC & 0-20 mA 11 Bit Plus Sign
	Analog Input Scan Time (Not Through Put Time)	10 ms	2.5 ms	250 μs	128 μs
	Analog Output Resolution	12 Bit		±10V DC & 0-20 mA 10 Bit Plus Sign	±10V DC & 0-20mA 11 Bit Plus Sign
	Analog Output Scan Time (Not Through Put Time)	10 ms		2 ms	500 μs
<b>HIM Information</b>	HIM - Local LCD	Yes		Yes - graphical	
	HIM - Remote LCD	Yes		Yes, NEMA 4X / IP66	
	HIM - Hand-held	Yes		Yes	
	HIM - CopyCat function	Yes		Yes	
	HIM - Languages	6		7	
	HIM - Local LED	No		No	
HIM - Auto/ Manual function	No		Yes		
<b>Features</b>	Motor Control Type	V/Hz and Sensorless Vector		FOC Vector, Sensorless Vector & V/ HZ (Open or Closed Loop)	
	Flying Start	Yes		Yes (Instantaneous)	
	Bus Regulator	No	Yes	Yes	
	S - Curve	Yes		Yes	
	Drive Overload Protection	Yes		Advanced (Meets new NEC code)	
	Advanced Diagnostics	Yes		Yes - Electronic Test Points	
	Input Phase Loss	No	Yes	Yes	
	User Sets	No		3 complete sets	
	Preset Speeds	8		7	
	Process Control Loop	Yes		PID (highly configurable)	
	Fast Flux Up	Yes		Auto or Manual	
	Fast Brake to Stop	No		Yes	
	Flux Braking	No		Yes	
	Feedback Loss Switchover	No		No	
Battery Back-up	No		No		
Multi-Motor Parameters	No		supported by dynamic user sets		

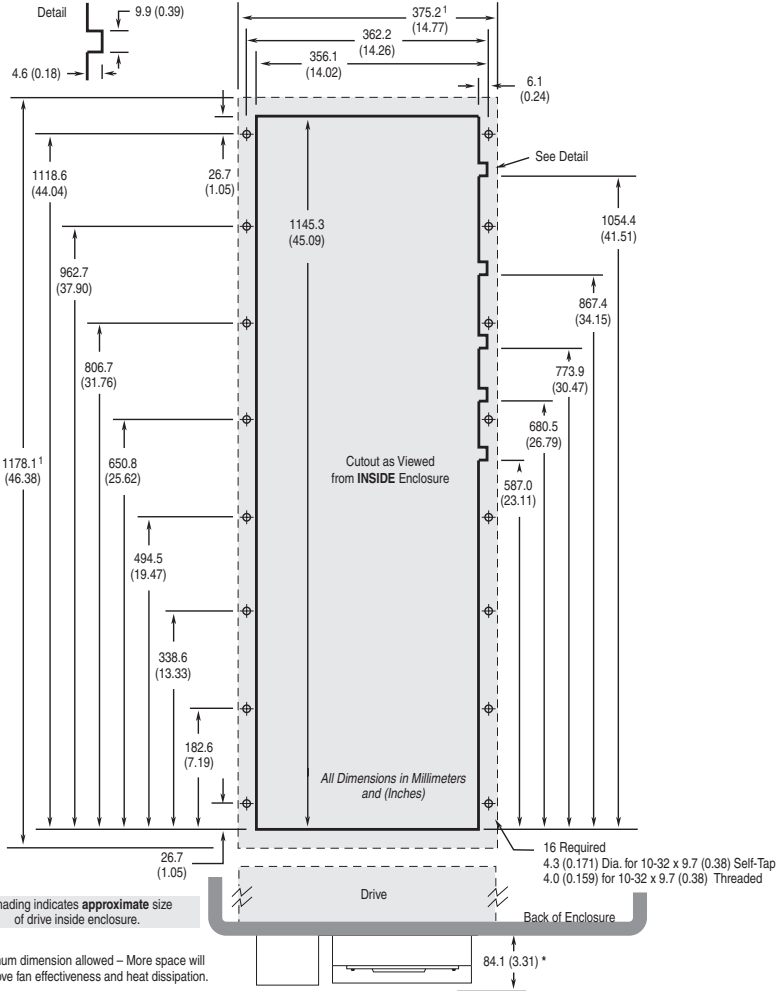
## Specifications and Features *(continued)*

Drive Model	1336 PLUS	1336 PLUS II	PowerFlex 70	PowerFlex 700	
<i>Catalog Number</i>	<i>1336S-xxxxx</i>	<i>1336F-xxxxx</i>	<i>20A-xxxxxxx</i>	<i>20B-xxxxxxx</i>	
<b>Application Features</b>	SynchLink	No		No	
	Motion Controller	No		No	
	Inertia Adaptation	No		No	
	Speed Profiles	No	Step Logic	No	Indexer for profiles based on time, dig inputs & encoder
	Position Control	No	Step Logic (With Encoder Feedback)	No	Point to Point (Indexer), Pos. Follower
	P-jump (traverse function)	No	Yes	Yes	No
	Lifting Application	No		No	TorqProve for lifting applications standard
	Winder Application	No		No	
	Electronic Gearing/ Line Shaft	No		No	

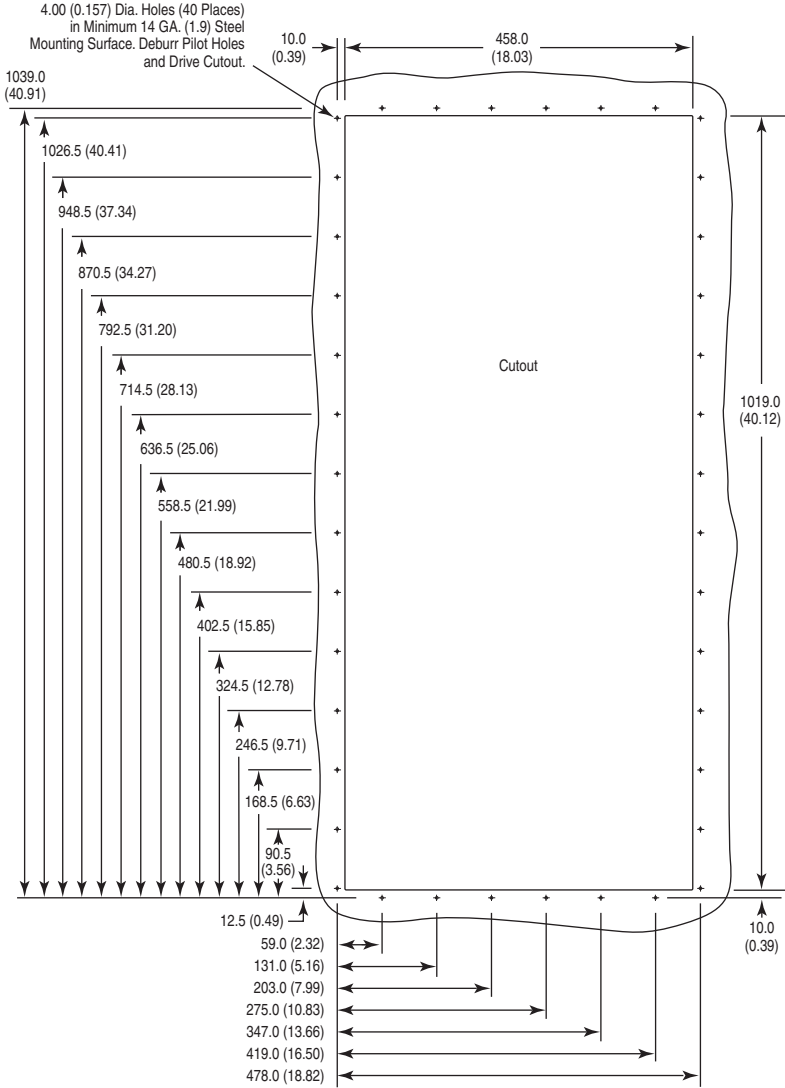




### 1336 Flange Mount Cutout - Frame D

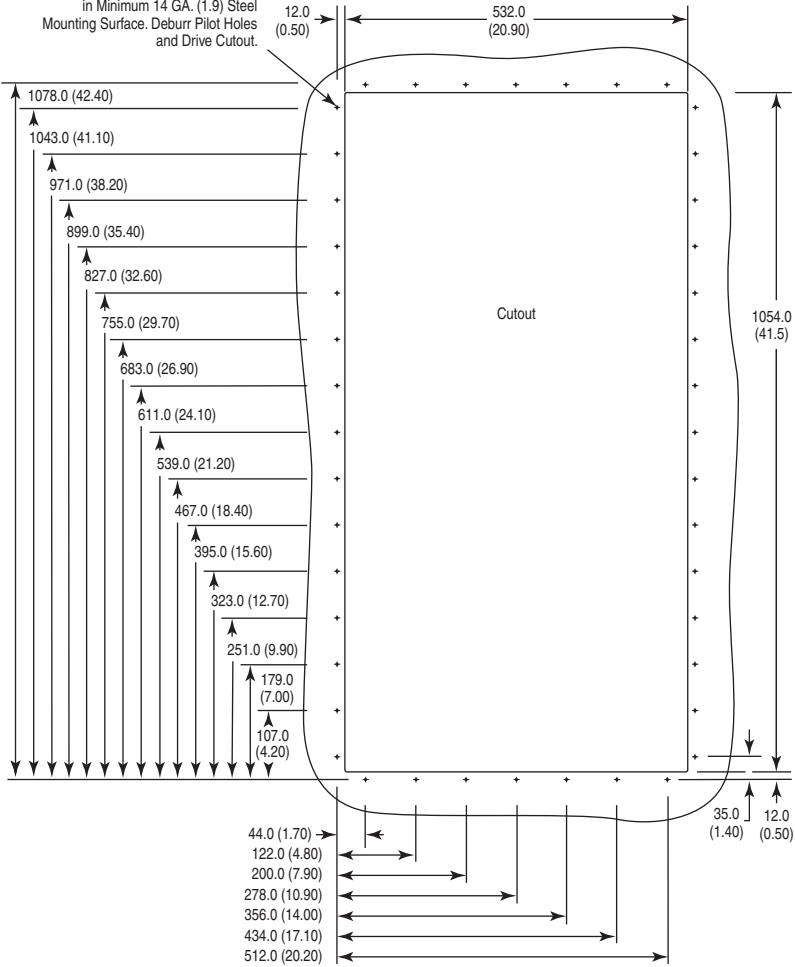


**PowerFlex 700 Flange Mount Cutout - Frame 5**



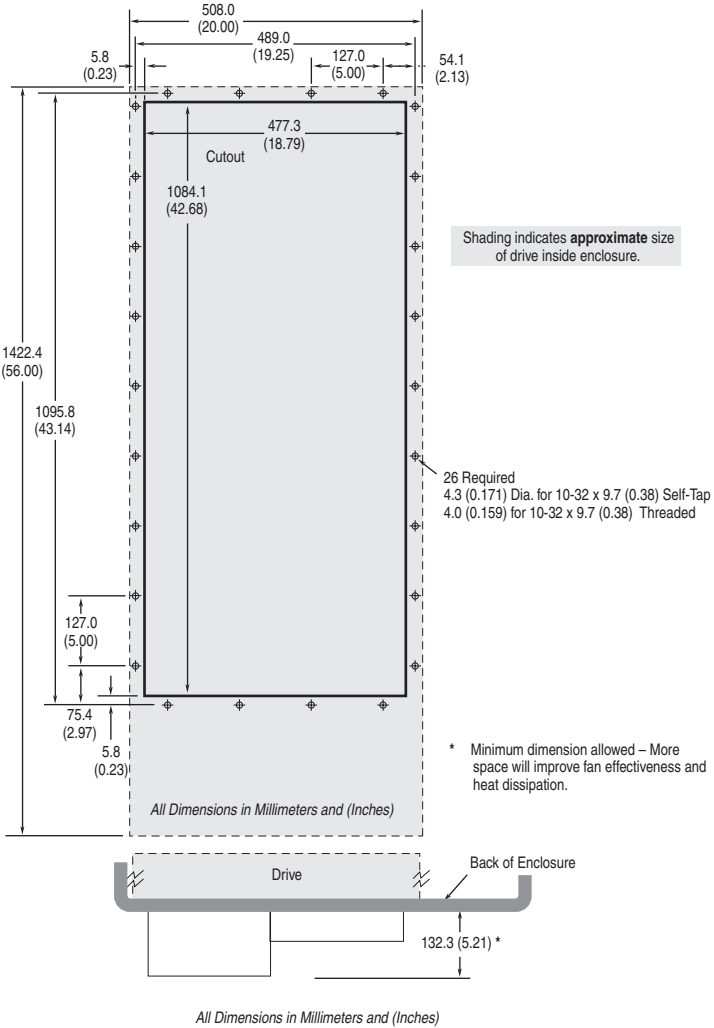
# PowerFlex 700 Flange Mount Cutout - Frame 6

4.00 (0.157) Dia. Holes (44 Places)  
in Minimum 14 GA. (1.9) Steel  
Mounting Surface. Deburr Pilot Holes  
and Drive Cutout.

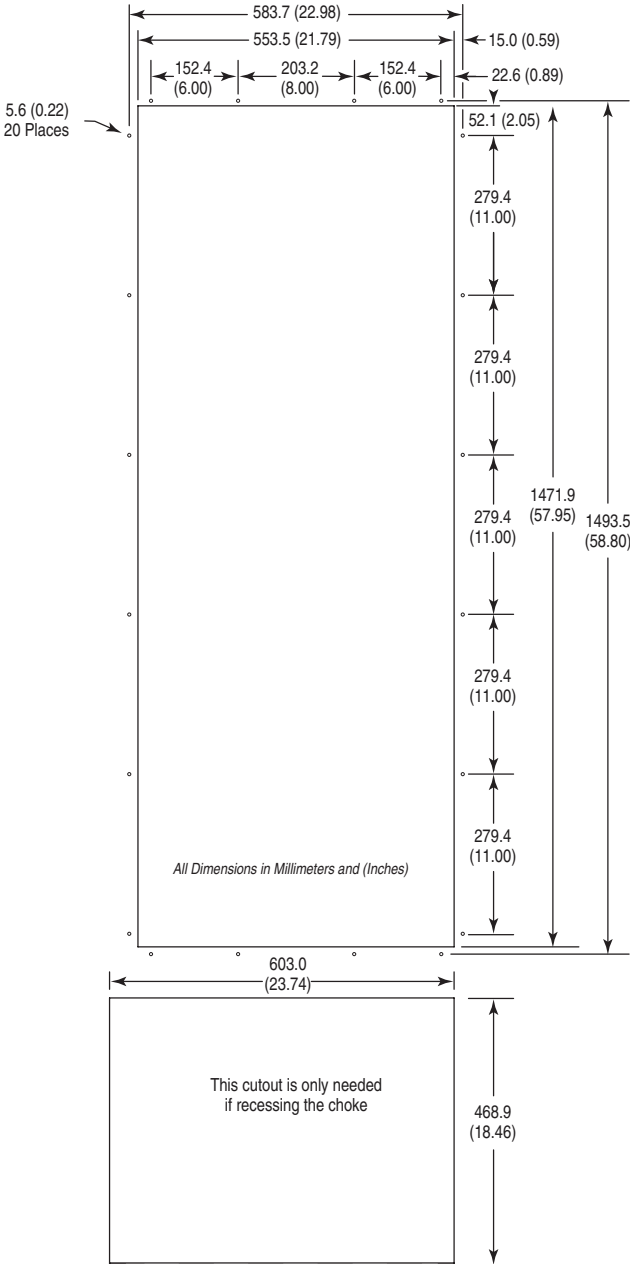


**Note:** Frame 7 cutout dimensions are the same as the 1336, Frame E.

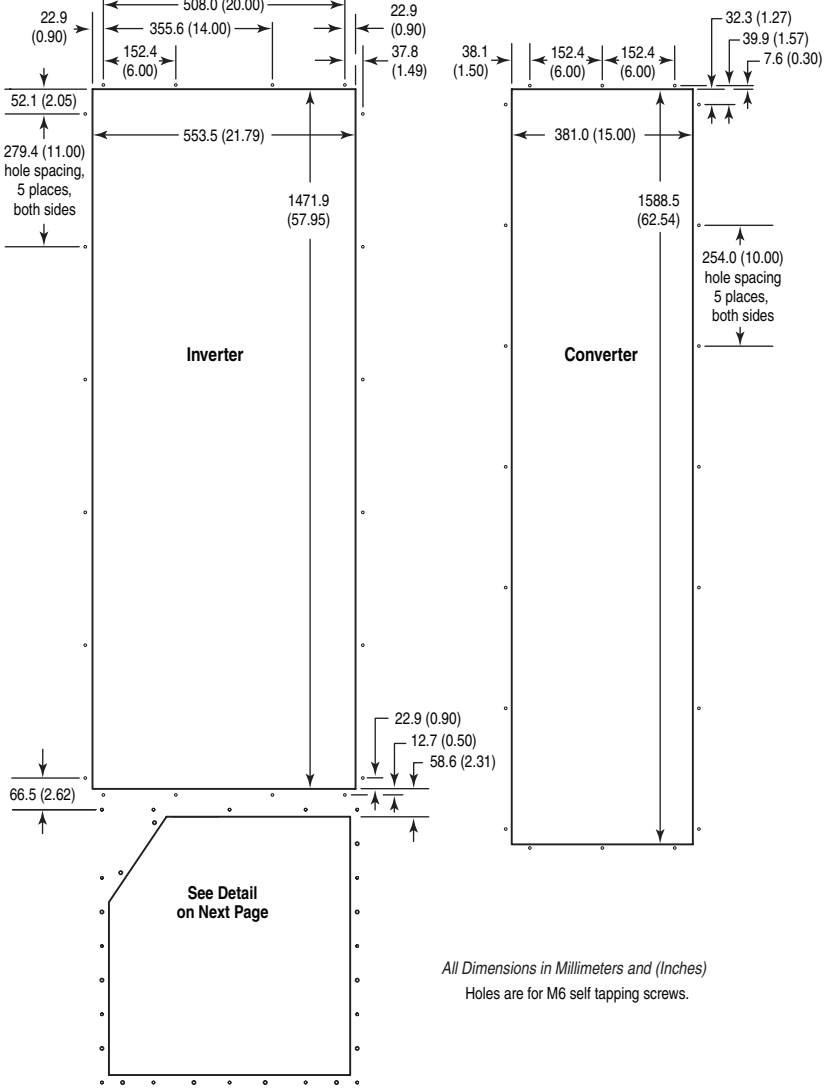
**PowerFlex 700 Flange Mount Cutout - Frame 7**



**PowerFlex 700 Flange Mount Cutout - Frames 8 & 9**



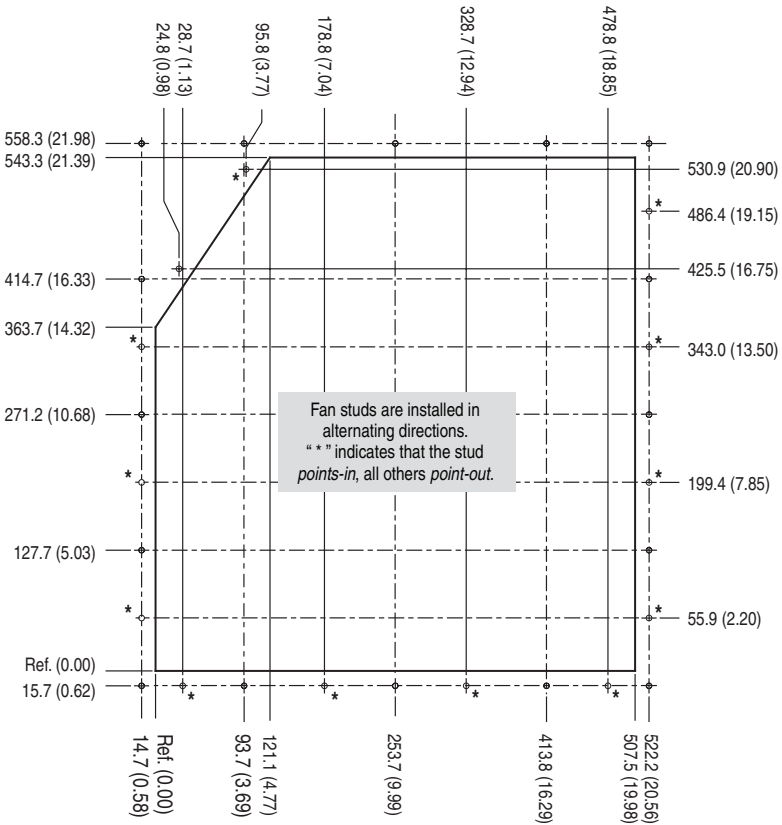
**PowerFlex 700 Flange Mount Cutout - Frame 10**



*All Dimensions in Millimeters and (Inches)  
Holes are for M6 self tapping screws.*

**Important:** Backplate and extension are a single piece. Drive chassis can be removed from backplate to mount in user supplied IP54, NEMA/UL Type 12 enclosure.

**PowerFlex 700 Flange Mount Cutout - Frame 10 Detail**



**Important:** Backplate and extension are a single piece. Drive chassis can be removed from backplate to mount in user supplied IP54, NEMA/UL Type 12 enclosure.

# Terminal Comparison

Description	Terminal Designation			
	1336 PLUS	1336 PLUS II	PowerFlex 70	PowerFlex 700
Input AC Line - R(L1)	R (L1)	R (L1)	R (L1)	R (L1)
Input AC Line - S(L2)	S (L2)	S (L2)	S (L2)	S (L2)
Input AC Line - T(L3)	T (L3)	T (L3)	T (L3)	T (L3)
Motor - U (T1)	U (T1)	U (T1)	U (T1)	U (T1)
Motor - V (T2)	V (T2)	V (T2)	V (T2)	V (T2)
Motor - W (T3)	W (T3)	W (T3)	W (T3)	W (T3)
Brake Resistor			BR1	BR1 (Fr 0-6)
Brake Resistor			BR2	BR2 (Fr 0-6)
DC Bus -	DC-	DC-	DC-	DC-
DC Bus +	DC+ / BRK	DC+ / BRK	DC+	DC+
Motor Ground	PE	PE	PE	PE ↓
Drive Ground	PE	PE	PE	GRD/PE
Analog Input 1 Comm.	3,4	4	IO TB-14 (volts), 16 (current)	IO TB-1
Analog Input 1 (+/-)	2 (Pot), 5 (0-10v), 6 (4-20 mA)	2	IO TB-15 (volts), 17 (current)	IO TB-2
Shield	3,4	5		
Analog Input 2 Comm.		4	IO TB-18 (volts), 20 (current)	IO TB-3
Analog Input 2 (+/-)		3	IO TB-19 (volts), 21 (current)	IO TB-4
Analog Input 3 (NTC-) Comm.		4		
Analog Input 3 (NTC+)		6		
Shield		5		
Analog Output 1 (-)	4	9	IO TB-22	IO TB-6
Analog Output 1 (+)	9	7	IO TB-23	IO TB-7
Analog Output 2 (-)		9		IO TB-8
Analog Output 2 (+)		8		IO TB-9
+10v Reference	1- (5v only)	1- (5v only)	IO TB-10	IO TB-22
Reference Common		4	IO TB-8	IO TB-5
-10V Reference			IO TB-8	IO TB-21
Encoder A	34	34	ENC TB-6	ENC TB-1
Encoder A (Not)	32	32	ENC TB-5	ENC TB-2
Encoder B	31	31	ENC TB-4	ENC TB-3
Encoder B (Not)	33	33	ENC TB-3	ENC TB-4
Encoder Z				ENC TB-5
Encoder Z (Not)				ENC TB-6
Encoder Reference (+)	35	35	ENC TB-1	ENC TB-7
Encoder Reference (-)	36	36	ENC TB-2	ENC TB-8
Encoder Shield	TE	TE		

## Terminal Comparison *(continued)*

Description	Terminal Designation			
	1336 PLUS	1336 PLUS II	PowerFlex 70	PowerFlex 700
24V DC Common (-)			IO TB-7	IO TB-26
24V DC Source (+)			IO TB-9	IO TB-24
Digital/Relay Output 1 (N.O.)	10	10	IO TB-11	IO TB-11
Digital/Relay Output 1 Comm.	11	11	IO TB-12	IO TB-12
Digital/Relay Output 1 (N.C.)			IO TB-13	IO TB-13
Digital/Relay Output 2 (N.O.)	12	12	IO TB-24	
Digital/Relay Output 2 Comm.	11	11	IO TB-25	IO TB-15
Digital/Relay Output 2 (N.C.)			IO TB-26	IO TB-14
Digital/Relay Output 3 (N.C.)	13	13		
Digital/Relay Output 3 Comm.	14	14		IO TB-15
Digital/Relay Output 3 (N.O.)	15	15		IO TB-16
Digital/Relay Output 4 (N.C.)	16	16		IO TB-33 <sup>(1)</sup>
Digital/Relay Output 4 Comm.	17	17		IO TB-34 <sup>(1)</sup>
Digital/Relay Output 4 (N.O.)	18	18		IO TB-35 <sup>(1)</sup>
Digital Input 1-3 Comm.	21,25,29	21,25,29	IO TB-8	IO TB-25
Digital Input 1	19	19	IO TB-1	IO TB-27
Digital Input 2	20	20	IO TB-2	IO TB-28
Digital Input 3	22	22	IO TB-3	IO TB-29
Digital Input 4-6 Comm.	25	25	ENC TB-8	IO TB-25
Digital Input 4	23	23	IO TB-4	IO TB-30
Digital Input 5	24	24	IO TB-5	IO TB-31
Digital Input 6	26	26	IO TB-6	IO TB-32
Digital Input 7	27	27		
Digital Input 8	28	28		
Drive Enable (Secure Disable Function)	30	30		Digital Input 6 can be configured
HW PTC Input 1				IO TB-10
HW PTC Input 2				IO TB-23

<sup>(1)</sup> Dedicated fault output - Frames 7-10 only.

# Communications

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Product Model Number	1336 Plus/Plus II	PowerFlex 70	PowerFlex 700
DF1	Yes	Yes	Yes
AS-i	No	No	No
BACnet	No	No	Yes
CANopen	No	Yes	Yes
CC-Link	No	No	No
ControlNet	Yes	Yes (Coax & Fiber)	Yes (Coax & Fiber)
Data Highway	No	No	No
DeviceNet	Yes	Yes	Yes
EtherNet/IP	Yes	Yes	Yes
FIP I/O	No	No	No
Foundation Fieldbus	No	No	No
Interbus	No	Yes	Yes
LonWorks	No	Yes	No
Metasys N2	Yes, 3rd Party	Yes	No
Modbus ASCII	Yes, 3rd Party	No	No
Modbus Plus	Yes, 3rd Party	No	No
Modbus RTU	Yes, 3rd Party	Yes	Yes
Modbus TCP/IP	No	No	Yes
PROFIBUS DP	Yes, 3rd Party	Yes	Yes
PROFINET	No	No	No
Remote I/O	Yes	Yes	Yes
SERCOS	No	No	No
Siemens P1	No	Yes	No

# Software

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Description	Software Feature	DriveTools SP/DriveExplorer
<b>Software Versions</b>	Full version	Yes
	'Lite' version	Yes (freeware)
	Pocket PC version	Yes
	Palm version	No
<b>Connectivity</b>	Serial Point-to-Point	Yes
	Serial Multi-drop	Yes
	Ethernet Direct	Yes
	ControlNet	Yes
	DeviceNet	Yes
	Profibus DP	No
	Bluetooth	Yes
	WiFi	Yes
<b>Select Features</b>	Other / Proprietary	Yes
	Offline capability	Yes
	Setup Wizards	Yes
	Diagram Views	Yes
	User-created Views	Yes
	I/O Terminal Configuration	No
	Control	Yes
	Oscilloscope / Graph	Yes
	Project Management	No
	Flash	Yes
	File Conversion Tool	Yes
	On-line Help	Yes
	Multi-language	English only

# Notes

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# Support Information

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## Rockwell Automation-Mequon

Tel: (1) 262.512.8200

## Internet

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