# AXPERT OPTI torque

The High Performance Electronic Digital Soft Starter -Internal Bypass Series



# 15...1065 A, 3.7...1000 kW (5...1340 HP) 200...690 V Supply Voltage



## Features

- 3-Phase control
- Universal control supply 90...270V AC 50/60Hz
- Most advanced integrated electronic motor over load and over current protections
- Wide range class 2 to 30 electronic overload
- In-built Energy Meter, displays kWH & MWH
- In-line (3-wire) / Inside Delta (6-wire) operating modes
- Motor PTC connection for motor over temperature protection
- Conformal coating on all circuit boards (PCBs) as standard to protect against 3C3 environment
- · Commissioning mode for easy commissioning
- RS-485 Modbus Communication with Axpert-Communicator software for remote monitoring
- Fully Configurable Analog and Digital Inputs / Outputs

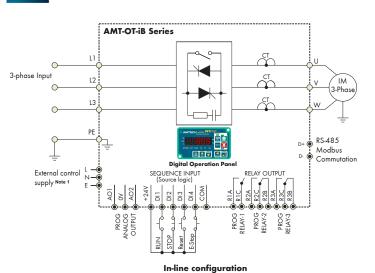
- Stores last 20 Diagnostic faults with of 8 key operational parameter values and status at the time of fault
- Senses current in all three phases and provides Current, Voltage & Power information; protection even in bypass mode
- Energy efficient design Cooling fan control as per heat-sink temperature. This will increase fan life and also reduce the power consumption
- Digital Operation Panel 5 digit, 7-segment LED display (IP65) with 2 decimal points, Unit indication, Start Mode, Start control, Bypass and Starter's status LEDs display, 9-Key Keypad, 3-LED for Run, Stop, Fault
- In-built PLC Function for logical operations and interlocking, with Axpert-Drive logic programming tool for easy programming

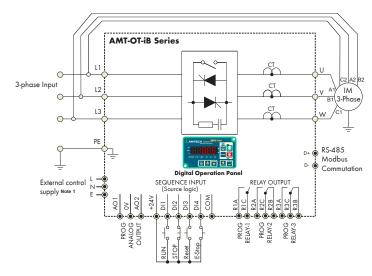
**AN ISO 9001: 2015 COMPANY** 

# Standard SPECIFICATIONS

Pow	er Source	4: 2	2004	480 V	AC or 6:	200	690	VAC, 3	3-Phas	e, 3-W	ire, 5	50/6	0 Hz														
External Control Supply			nase, :	50/60	Hz, 90	270	V or	115 V	or 230	0 V (Re	efer o	order o	ode fo	or cc	ontrol	suppl	y deta	ail)									
Tole	rance	Vo	ltage t	olerar	ce: -15%	, +10	%, Fre	quenc	y tolei	ance:	±5%																
AMI	-OT-iB-XXXXA-4/6-X-X	0015	0023	0028	0034 00	4 005	2 006	5 0078	0087	0096	0110	0125	0160	0180	0215	0250	0320	0360	0414	0477	0515	0600	0720	0832	0900	096	0 10
Max	applicable motor line current e) (A) - Standard Duty	15	23	28	34 4		1		87		110			180			320								900		┰
	applicable motor line current		$\vdash$		+	+	+-	+	$\vdash$													$\vdash$			$\vdash$		+
(Insic	le Delta) (A) <sup>(1</sup> - Standard Duty	25	40	48	58 7	89	112	134	150	166	190	216	276	311	371	432	553	622	716	825	890	1038	1245	1439	1557	1660	0 18
_	Control system	Dig	ital 32	2-bit Di	gital Sig	nal Co	ntroll	er																			
Control	Network connectivity	Sur	norts	PS-18	5 Modb	10 00 0	tanda	rd Pro	ofibus-	DP (sla	المرا	Devic	-Net (	CAN	loner	Ethe	rnet	Contr	امالا	are o	ntion	al					
<u>U</u>	THE THE CONTROLLED																				<u> </u>		6009	% of f	ull loa	4	
	Current feedback &	Motor current: Adjustable up to 30 % of unit current I-Trip Level: 100800% of full load current											000 11	10101	I-Limit Level: 100600% of full load												
	Electronic OLR	Low Level: 0100% of full load motor current I-Low Time: 020 minutes I-Limit Time: 1060 sec  4-Programmable Sequence Inputs, Sink / Source changeable, max 5 mA each																									
		4-Pı	rogran	nmabl	e Seque	nce Inp	outs, S	ink / S	Source	chang	geab	le, mo	ıx 5 m.	A ec	ıch												
Operation Specifications	Digital Inputs	Programmable between 17 different options: Not Used, Terminal, Jogging, External Fault, Fault Reset, Bypass Contactor, Main Contactor, E-Stop,														op,											
at je		Ramp Hold, Reverse Contactor, Run, Stop, Motor PTC, PLC I/P 14																									
ij		3-Programmable relays:  1-Relay: 1-NO for 5 A @ 240 VAC																									
be		2-Relay: 1-NO, 1-NC for 5 A @ 240 VAC																									
S uc	Potential Free Contacts	Programmable between 41 different options: Not Used, Ready, Run, Top of Ramp, Fault Alarm, I-Limit Alarm, Low Current Alarm, High Current Alarm, Temp Alarm, Reverse Contactor, Main Contactor, External Fan Control, Over Current Fault, Under Current Fault, I-Unbalance Fault, Overlo																									
aŧic	. 5.5	Fault, Over Voltage Fault, Mains Off Fault, Phase Loss Fault, External Fault, Emergency Fault, Motor PTC Short Fault, Motor PTC Over Temperature																									
per					Bypass F																				or OT	Fault	t,
0		Thermistor NC Fault, Thermostat NC Fault, Firing Fault, Thermistor Short Fault, SCR Short Fault, Watchdog Fault, PLC O/P 13																									
	A market and Control of the	2-Programmable analog current outputs AO1 & AO2: 420 mA with settable gain, bias, minimum and maximum scaling,12-bit																									
	Analog Outputs	Programmable between 7 different options: Output Current, Active Power, Reactive Power, Power factor, Motor torque, Heat sink temperature, Mo PTC, PLC Analog output 1 and 2																									
	Makes DTC Facilities				• •				l f		4 .			4 .													
	Motor PTC Feedback	One or three Motor PTC can be con											$\overline{}$	V-Ramp Up Time 1:1240 sec							Padastel 1, 25, 00%						
		V-Ramp Start					Dual Ramp Selection					_					.40 SE	ec		Pedestal-1: 2590% Target: 25100%							
suc	Start Mode							Kick Time: 02.0 sec I-Ramp Up Time: 160					_	Kick Voltage: 090% Initial Current: 100300%						I-Proportional Gain: 0.012			2				
ă ţ		I-Ramp Start							I-Integral Time: 0.01100.00					ır	nifiai (	Jurrei	11: 10	030	10%			Frioportional Calli. 0.012.9					
iji		T-Ramp Start						T-Ramp Up Time: 1240 sec					1.	Initial Torque: 1250%						Toro	ua lir	wi+: 1	250	D/			
pe								T-Proportional Gain: 0.12.0					l Ir							1010	ue Lir	nii: 1.	230	/0			
Operation Specifications		V-Ramp Stop												1.	Initial Voltage: 10025%						Fina	ایراد	100: 7	702	50/		
ă.	Stop Mode												_								_						
per		Brake Stop Brake Ramp Time: 0.120.0 sec Brake Voltage: 25100% Brake Time: 1240 sec																									
0		T-Ramp Stop         T-Ramp Down Time: 1240 sec         T-Integral Time: 0.01100.00           Coast to stop																									
	Control Mode	Local (Digital Operation Panel), Terminal, Serial																									
		Digital Operation Panel 5 digit seven segment LED display with 2 decimal points, Unit indication, Start Mode, Start control, Bypass and Starter's st																									
	Display and Keypad	LEDs display, 9-Key Keypad, 3-LED for Run, Stop, Fault. 13 predefined normal parameter display;														iia oic		3 311									
χĸ	module (Standard)	Can be mounted on panel door with optional extension cable.  Digital Operation Panel 128x64 Graphical LCD with white back light LED, 9-Key Keypad, 3-Status indicating LED for Run, Stop, Fault   Real Time Clock																									
Display												ack lig	ht LED,	9-K	ey Key	/pad,	3-Sta	tus inc	licatin	g LED	for Ru	ın, Sto	p, Fa	ult   R	eal Tir	ne Cl	lock
۵	Graphical Display and	Simultaneous display of 8 selectable monitor parameters Two graph screens with selectable graph signal and resolution																									
	Keypad unit (Optional)	Auto rotation of screens with settable graph signal and resolution  Auto rotation of screens with settable time interval  Can be mounted on panel door with optional extension cable																									
																							1 (		_		
	Overload Duty				ed start			350%	6 curre	ent, ead	ch of	30 se	econds	dur	ation,	i.e. 3	0 sec	onds	on tim	e and	330	seco	nd off	time.	For m	ode	ls
ıty		-0720A to -1065A, 6 equal start.  10 equally spaced starts per hour at 500% current, each of 15 seconds duration, i.e. 15 seconds on time and 345 second off time. For models																									
Ţ		-0720A to -1065A, 6 equal start.  10 equally spaced starts per hour at 500% current, each of 30 seconds duration, i.e. 30 seconds on time and 340 second off time. For models																									
Start Duty																i.e. 3	0 sec	onds	on tim	e and	340	seco	nd off	time.	For m	ode	ls
S		-0720A to -1065A, 6 equal start. Contact AMTECH for derating information.																									
	Utilization Category	AC:	53a o	r AC5	3b																						
_	Diagnostic fault and protection	Over current fault					Over voltage fault						-		emperature fault					Reverse contactor fault			ılt				
Protection		Over load fault					SCR Short fault						_	Phase direction f							Main contactor fault						
) te										ency fo			_	I-Unbalance fault							Bypass contactor fault						
Ţ		_	Phase Loss fault         Under frequency fault         Firing fault           Mains off fault         Motor PTC fault         Watchdog fault																								
				tault				Moto	or PTC	tault				١ ٧	Vatch	dog f	ault										
	Installation Location	Inde																									
nen	Ambient Temperature				122 °F)																						
onn	Storage Temperature				.158 °F)																						
Environment	Altitude (above sea level)				ft) witho		ıting,	above	this d	erate 3	3% pe	er 30.	5 m (1	000	tt) up	to 40	000 n	n									
뜐	Humidity				n conde			<u> </u>					,														
	Enclosure				A model,																						
Refe	rence Standards	UL.	508, l	JL 609	47-4-2,	CSA C	22.2	6094	7-4-2,	IEC 60	0947	7-4-2,	IEC 60	)947	7-1, C	E (EN	609	47-4-2	2), IEC	605	29						

# Typical Connection Diagram





Inside Delta configuration

#### Note:

1. Control supply 1-phase, 50/60 Hz, 90...270 VAC or 115/230 VAC to be provided by customer. Refer ordering code.

# Display Options

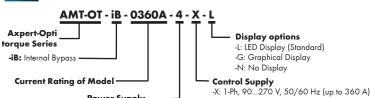


LED Display (Standard)

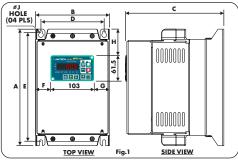
**Graphical LCD Display (Optional)** 

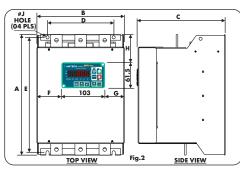
### Model Number

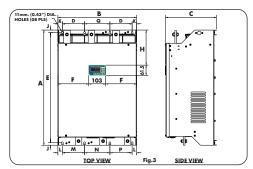
-6: 3-Ph, 600 V (200...690 V), 50/60 Hz



### Outline **Dimensions**







Model	Dimensions in mm (Inch)													
	Α	В	С	D	E	F	G	н	J	in kg (lb)				
AMT-OT-iB	-0015A, -0023A	, -0028A, -003	4A, -0044A, -00	52A, -0065A, -	0078A, -0087A	, -0096A, -0110	A		•					
Fig.1	273 (10.75)	173 (6.81)	230 (9.05)	148 (5.83)	255 (10.04)	35 (1.38)	35 (1.38)	61.5 (2.42)	7 (0.28)	6.7 (14.8)				
AMT-OT-iB	-0125A, -0160A	, -0180A, -0215	A											
Fig.2	393 (15.47)	308 (12.13)	274.5 (10.81)	233 (9.17)	373 (14.69)	102 (4.02)	102 (4.02)	111 (4.37)	11 (0.43)	19 (41.9)				
AMT-OT-iB	-0250A, -0320A	A, -0360A												
Fig.2	425 (16.73)	308 (12.13)	310.5 (12.22)	233 (9.17)	405 (15.94)	102 (4.02)	102 (4.02)	120 (4.72)	11 (0.43)	23 (50.7)				

Model	Dimensions in mm (Inch)														
Model	Α	В	С	D	E	F	Н	J	K	L	M	N	P	Q	in kg (lb)
AMT-OT-iE	3-0414A, -0	0477A, -0	515A, -060	OA											
Fig.3	705 (27.7)	482 (19.0)	312.5 (12.3)	136 (5.3)	675 (26.5)	189.5 (7.4)	214 (8.4)	15 (0.6)	25 (1.0)	25 (1.0)	136 (5.3)	155 (6.1)	136 (5.3)	155 (6.1)	67 (147.7)
AMT-OT-iB	3-0720A, -	0832A, -09	900A, -09	60A, -106	5A		•		•	•	•		•	•	
Fig.3	830 (32.7)	578 (22.7)	358.5 (14.1)	173 (6.8)	800 (31.5)	237.5 (9.3)	316 (12.4)	15 (0.6)	25 (1.0)	25 (1.0)	173 (6.8)	1 <i>77</i> (7.0)	173 (6.8)	177 (7.0)	112 (246.9)
Contact Am	tech for dim	ension detai	il										•	•	-

#### OUR OTHER OFFERINGS



#### "DRIVE FOR SUCCESS"

We provide complete motor control system solutions or individual system components to address industry specific requirements and optimize your process.

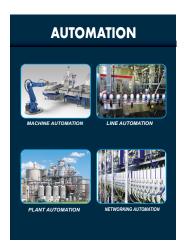
Our solutions are simple, compatible and environment friendly, resulting in efficient production, cost optimization and minimizing human intervention. It even leads to energy conservation especially in typical Fan, Blower, Pump applications.

#### **Flagship Solutions**

- Axpert-Eazy+ Series VFD
- Axpert-VT240S Series VFD
- Axpert-Hivert Series Medium Voltage Drive
- Axpert-Opti torque Series Soft
- Axpert-Eazy HF Series High Frequency Drive

#### **Applications**

- Fans, Blowers, Pumps
- Compressors, Centrifuges
- Agitators & Conveyors
- Crane, Hoist & Elevator
- Rolling Mill, Sugar Mill, Pulp Mill, Coal/Raw Mill



# "AUTOMATION. MADE EASY"

"Automation Made Easy" is our philosophy to simplify the increasing complexity of modern production systems through our Amtech-Jetter PROCESS PLC technology platform.

Over 30 years experience in Machine, Line, Plant and Networking Automation has helped us to find the best solution in terms of functionality, sustainability and efficiency.

#### **Flagship Solutions**

Jet Control series PLC Controllers, Expansion Modules, Jet view Soft SCADA, HMIs, Jet Move series Servo and Axes Control System.

#### **Applications**

- Paper Machine Automation
- Textiles Manufacturing
- Packaging
- Winder Machine
- Crane & Material Handling Equipment
- **CNC** Machines
- Semiconductor Assembly Line
- Retrofit solutions



# "ONE STOP SOLUTION TO QUALITY POWER"

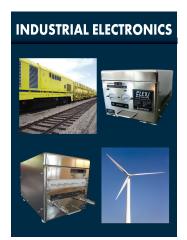
Amtech's Power Quality Solutions offer you the synergy of multiple benefits - energy conservation, enhanced operational efficiency and reliability through a dedicated range of products and services.

#### **Products**

- Axpert-i-Sine Series Active Frontend Converter
- Axpert-i-Sine Series Active Harmonic Filter (AHF)
- Axpert-i-Sine Series Active Static VAR Compensator (STATCON)
- Harmonic Reactor
- Sinus Filter
- EMI/RFI Filter

#### Services

- Harmonic Audit and Solutions to comply with IEEE-519 standard
- System design, optimization & payback analysis
- Consultancy for Power Quality improvement
- Training on Power Quality Management
- Energy Audit and solutions by experienced BEE certified professionals



#### **"YOUR TECHNOLOGY** PARTNER'

Amtech's Power Electronics Engineering Services offer technology solutions to independent R&D labs, industrial segments like Traction, Oil & Gas, Automotive and Renewable Energy for wind to reduce your time to market.

#### **Products**

- Traction Drive
- High Voltage Power Supply
- Battery back-up drive & systems for critical loads
- Wind Power Converter
- Digital Heater Controller
- **Battery Charger**
- Drive Train

#### Services

- Power Electronics Engineering Services
- Customized solutions for industry specific applications
- Solution for Oil, Gas & Mining
- Power Electronics product development & testing
- Product verification & validation
- **Retrofit Solutions**



### DRIVE FOR SUCCESS

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