



## **Active Cube 8**

The high power solution



PRODUCTS &  
SOLUTIONS



# Active Cube 8

## The high power solution.

Bonfiglioli Active Cube 8 Series of inverter drives sets new standards in technology for a broad range of applications. Active Cube 8 drives are particularly suited to heavy duty industries such as mining industry, metal industry, water treatment, pump station and many others.

The Active Cube 8 offers a wide range of built-in functions like PLC functions allowing energy savings, precise diagnostic and more flexible programmability.

### Special Feature

- All features of standard ACU
- Complete Cabinet Design possible: "Plug and Play"
- Output Power: 200 ... 400 kW (400V, 525V and 690V)
- High overload capability (1,5 / 1,8)
- STO / SIL 3 / PL e
- Standard cooling and optional watercooling
- Parallel connection of up to 3 devices (1200 kW)
- Can be connected to Bonfiglioli regenerative units AEC 8

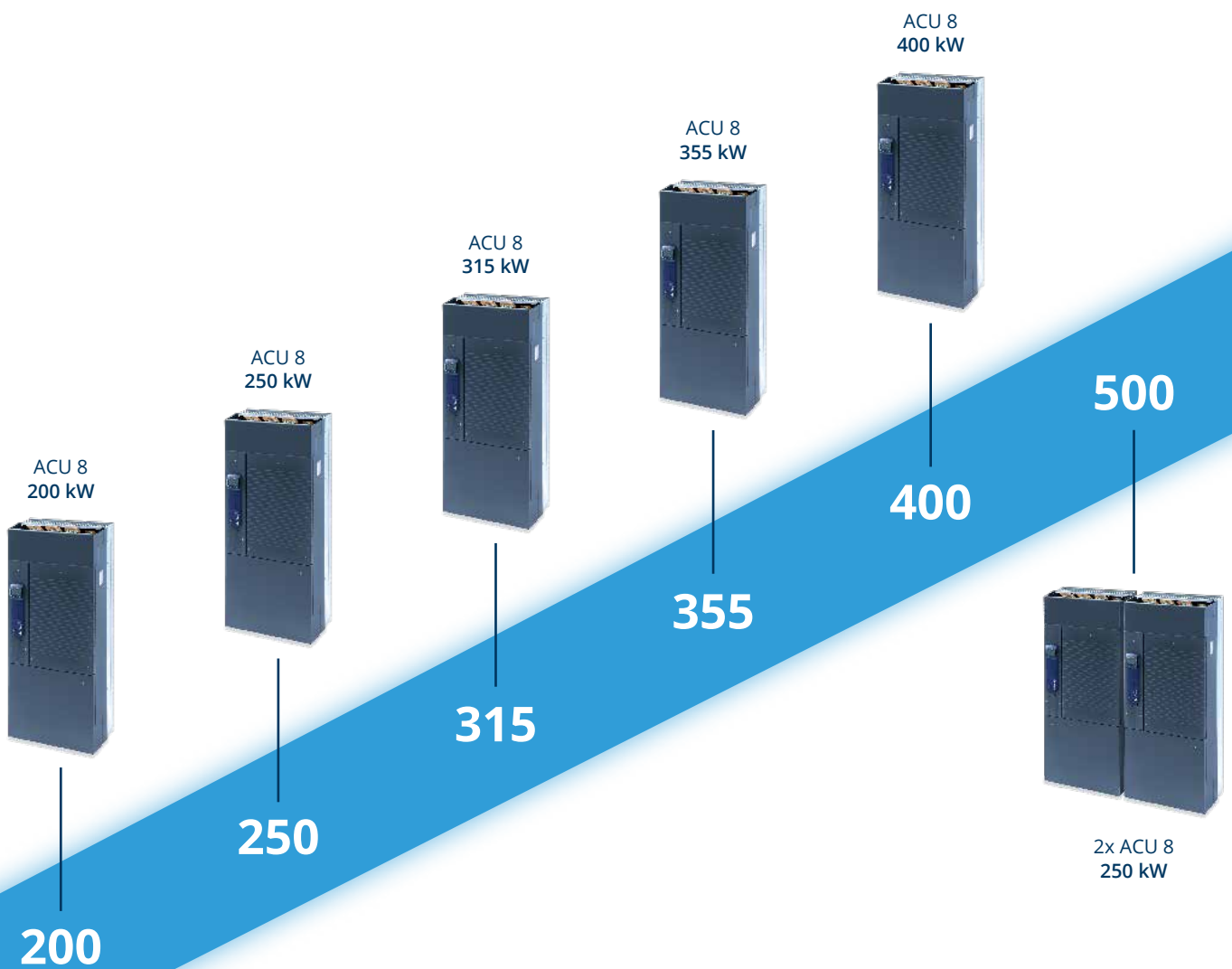


## The Active Cube 8 series: a flexible offer

Adapted for a wide range of applications.

VPlus engineering and configuration software includes advanced and effective tools for diagnostics and troubleshooting: real time oscilloscope analyzer, variable monitoring window.

**Active Cube 8 extends Active Cube power range up to 1200 kW.**





**1**

**Robust Design** - Active Cube 8 the perfect solution for harsh environments.

The Active Cube 8 is designed to maximize the opportunities in machine automation. Extensive motor controls and functionality allow this solution to be used in a wide variety of industrial machinery and plants.

**Key Features**

- High creeping distances
- Coated boards
- Monitoring of cabling
- Monitoring of brake resistor
- Variable fan speed



**Pump station**

Pumps are typically speedy applications that demand drives with a high power range. Pumps are used in a wide variety of industrial contexts such as a humid atmosphere.



**Mining industry**

Drives for the mining industry need to guarantee lasting efficiency in the movement and processing of heavy and bulky loads, along with maximum reliability.



**Metal industry**

The mining industry has special demands for drives. The drives need to be small, compact and energy-efficient with a high degree of performance efficiency.



**2**

**Compact size** - Active Cube 8 requires minimum space.

High power density 1200 kW in 1200mm cabinet, best power density in market. The power range of the new drives is 200 - 400 kW for single inverters. With easy and cost effective parallel connection of up to 3 drives applications in power range of up to 1200kW can be realized on minimal panel space. The minimum panel width for a 1200 kW drive is only 1200 mm!

**Key Features**

- Minimized Space
- Tropicalization
- Master-Slave Connection
- 3 Phase inputs or 6 Phase inputs to reduce the Total Harmonic distortion (THD)



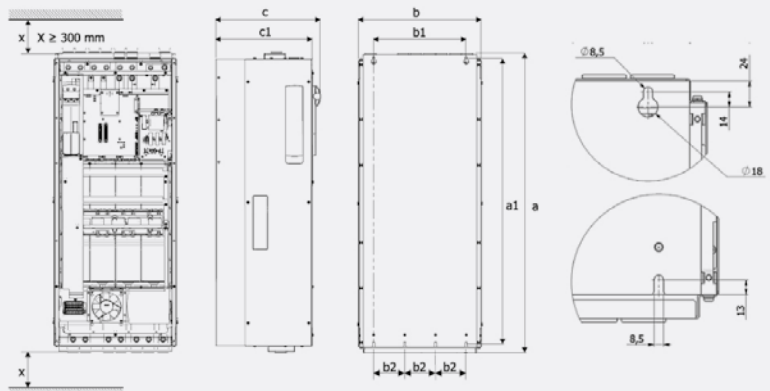
**Standard mounting**

Two ACU8 in one cabinet  
2x 439 mm = 878 mm  
Standard cabinet width: 1200 mm



**Compact mounting**

Three ACU8 in one cabinet  
3x 375 mm = 1125 mm  
Standard cabinet width: 1200 mm



**ACU 410/510/610**

Assembly dimensions in mm

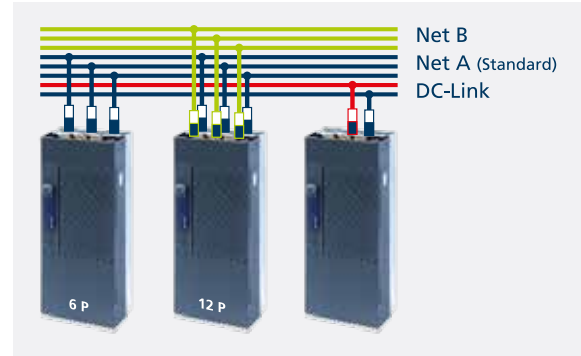
A	A1	B	B1	B2	C	C1
1067	1017	439	330	110	375	345

3

### Flexible supply - Active Cube 8 can be used in any environment type.

**Key Features**

- 3 Phase / 6 Pulse - standard connection
- 6 Phase / 12 Pulse - available for THD reduction
- DC Bus coupling



4

### Parallel connection - Active Cube 8 in parallel connection is mini solution for maxi power.

**Key Features**

- Minimized space
- 1200 kW in 1200 mm cabinet
- Modular up to 1200 kW
- 3 Drives react as 1
- 1 configuration in VPlus
- Minimized Jitter 5ns
- Motor chokes not necessary
- Master + Slave current output is balanced
- AC output current is synchronized
- Optional DC bus bar coupling



### Energy saving - Active Cube 8 and AEC 8.

AEC regenerating inverters are based on Active technology and deliver the same excellent reliability and versatility as the latest generation of Bonfiglioli inverters.

**Key Features**

- Power range 200 ... 400 kW at 690 VAC
- Power range 5.5 ... 400 kW at 400 VAC
- 6 Frame sizes
- Multiple communication options
- Sinusoidal or block feed back current configurable
- Optional water cooling



### Designation

#### Active Cube 8

Type	[V]	KEY	[KW]	Brake chopper
ACU	410	53	200	A = Integrated
	510	55	250	
	610	57	315	NA = none
	610	59	355	
		61	400	

# Technical Data

ACU 8	410 / 400 V					
	-51	-53	-55	-57	-59	-61

## Output, motor side

Recommended motor shaft power	P	kW	160	200	250	315	355	400
Output current	I	A <sub>eff.</sub>	305	380	475	595	645	735
Long-term overload current (60 s) <sup>1)</sup>	I	A <sub>eff.</sub>	460	570	715	895	970	1100
Short-term overload current (1 s) <sup>2)</sup>	I	A <sub>eff.</sub>	550	685	855	1070	1160	1330
Output voltage	U	V <sub>eff.</sub>	Maximum input voltage, three-phase					
Protection	-	-	Short circuit / earth fault proof <sup>3)</sup>					
Rotary field frequency	f	Hz	±500 Hz <sup>3)</sup>					
Switching Frequency	f	kHz	2, 4, 8 <sup>4)</sup>					

## Output, braking resistor (extern)<sup>4)</sup>

Min. Brake resistance	R	Ω	1.20	2.17	1.20	0.80	0.80	0.80
Recommended Brake resistance (U <sub>dBC</sub> = 770 V)	R	Ω	1.50	2.2	1.50	1.00	1.00	1.00

## Input, mains side

Mains current <sup>5)</sup>	I	A	280	350	440	550	620	690
Mains voltage	U	V	400					
Mains frequency	f	Hz	50 (60)					
Fuses <sup>6)</sup>	I	A	400	500	630	700	800	900
Fuses as per UL <sup>6)</sup>	Type	-						

## Mechanical

Dimensions	HxWxD	mm	1067 x 439 x 375					
Weight approx.	m	kg	120	120	140	140	140	140
Ingress protection rating	-	-	IP20 (EN60529)					
Connection terminal	A	mm <sup>2</sup>	up to 2 x 240					
Form of assembly	-	-	Vertical					

## Ambient conditions

Energy dissipation (2 kHz Switching Frequency)	P	W	3800	4500	5600	6300	6850	7900
Coolant temperature	T <sub>n</sub>	°C	-25 ... 45 (3K3 DIN IEC 60721-3-3)					
Storage temperature	T <sub>L</sub>	°C	-25 ... 50					
Transport temperature	T <sub>T</sub>	°C	-25 ... 70					
Relative humidity	-	%	15 ... 85, not condensing					

If required by the customer, the switching frequency may be increased if the output current is reduced at the same time. Comply with the applicable standards and regulations for this operating point.

## Output current<sup>7)</sup>

Frequency inverter nominal power	Switching Frequency		
	2 kHz	4 kHz	8 kHz
160 kW	305	305	305
200 kW	380	380	380
250 kW	475	475	475
315 kW	595	595	595
355 kW	645	645	645
400 kW	735	735	735

<sup>1)</sup> Power reduction with torsional frequencies below 10 Hz

<sup>2)</sup> Only with torsional frequencies above 10 Hz

<sup>3)</sup> Depending on switching frequency

<sup>4)</sup> Reduction of switching frequency possible on certain conditions

	510 / 525 V						610 / 690 V					
	-51	-53	-55	-57	-59	-61	-51	-53	-55	-57	-59	-61
	160	200	250	315	355	400	160	200	250	315	355	400
	230	290	360	450	490	560	180	230	280	350	400	450
	345	435	540	675	735	840	270	350	420	530	600	675
	420	520	650	810	880	1000	330	420	510	630	720	810
	Maximum input voltage, three-phase						Maximum input voltage, three-phase					
	Short circuit / earth fault proof <sup>3)</sup>						Short circuit / earth fault proof <sup>3)</sup>					
	±500 Hz <sup>3)</sup>						±500 Hz <sup>3)</sup>					
	2, 4, 8 <sup>4)</sup>						2, 4, 8 <sup>4)</sup>					
	1.20	1.20	1.20	0.80	0.80	0.80	3.00	3.00	3.00	1.80	1.80	1.80
	2.70	2.70	2.70	1.50	1.50	1.50	5.00	5.00	5.00	3.00	3.00	3.00
	215	270	335	420	470	525	160	200	250	320	360	410
	525						690 (reduced for UL: 600)					
	50 (60)						50 (60)					
	315	350	450	550	630	700	250	315	350	450	500	550
	1067 x 439 x 375						1067 x 439 x 375					
	120	120	140	140	140	140	120	120	140	140	140	140
	IP20 (EN60529)						IP20 (EN60529)					
	up to 2 x 240						up to 2 x 240					
	Vertical						Vertical					
	3800	4500	5600	6300	6850	7900	3200	3950	4500	5500	6250	6900
	-25 ... 45 (3K3 DIN IEC 60721-3-3)						-25 ... 45 (3K3 DIN IEC 60721-3-3)					
	-25 ... 50						-25 ... 50					
	-25 ... 70						-25 ... 70					
	15 ... 85, not condensing						15 ... 85, not condensing					
	Switching Frequency						Switching Frequency					
	2 kHz	4 kHz		8 kHz			2 kHz	4 kHz		8 kHz		
	230	230		230			180	180		180		
	290	290		290			230	230		230		
	360	360		360			280	280		280		
	450	450		450			350	350		350		
	490	490		490			400	400		400		
	560	560		560			450	450		450		

<sup>5)</sup> Related value with recommended motor power, 400V mains voltage and mains inductance  $U_k=4\%$

<sup>6)</sup> For UL-compliant fusing, the specified fuses must be used (in preparation)

<sup>7)</sup> Maximum current in continuous operation

<sup>8)</sup> Semiconductor fuses recommended (in example Busmann Type 170M)

## Global Presence



Bonfiglioli is a market force with a presence spanning 22 countries on 5 continents. Our organization makes the most of geographic proximity to offer complete solutions combining efficiency and competence.



3804  
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20  
BRANCHES



13  
PLANTS



550  
DISTRIBUTORS



80  
COUNTRIES

## We Are a Global Company

Thanks to an international network of sales branches and closely interconnecting production plants, we can guarantee the same high standards of Bonfiglioli quality anywhere at any given time. Aware that our direct presence in local markets is the key to long-lasting success, our family includes 20 sales branches, 13 production plants and more than 500 distributors around the world.

**Our organization is always close by, offering complete and efficient solutions and supporting our customers with dedicated services, such as co-engineering or after-sales assistance.**



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