



VACON 10 EASY AND SMART

VACON
DRIVEN BY DRIVES

EASY AND SMART

The Vacon 10 is a compact AC drive speed control solution for all general-purpose applications including pumps, fans, material handling, door applications and many other. Thanks to its smart design with loadable application modules and availability in all voltage versions, the Vacon 10 is the ideal solution for OEM customers who are looking for an easy product which is at home everywhere.

Easy installation and commissioning

- Small physical size
- DIN rail and screw mountable
- Intelligent menu

BENEFIT



- Saving installation cost
- Savings, no extra option needed
- Saving commissioning time

Versatile features

- Extensive and fully programmable I/O
- Modbus as standard
- Varnished boards as standard
- Brake chopper in 3-phase MI2 and MI3 frames
- PI controller as standard
- Integrated EMC C2 level filter as option

BENEFIT



- Simplifies offering
- Savings, no extra cost
- Longer lifetime in demanding environment
- Savings, no extra option
- Savings, no extra option
- Savings, no extra option

Environment-friendly

- RoHS compliant
- Recyclable materials
- Optimized energy consumption

BENEFIT



- Saving in recycling costs
- Smaller CO₂ footprint
- Saving energy

Extensive PC Tools

- Vacon Live – commissioning
- Vacon Loader – software loading
- Vacon Programming – software creation

BENEFIT



- Saving commissioning time
- Saving service time
- Additional customer value



MI1



MI2



MI3

THE POSSIBILITIES



PE plate with 360°
earthing of cable shields



NEMA Type 1 upgrade kit with
conduit box and top cover



IP21 top cover adds protection
against dripping water



MCA adapter for parameter
cloning and USB cable



Loadable application software

- Flexible standard software
- Motor potentiometer application
- Door machinery application
- PFC Multi-pump control for booster sets
- Customer-specific versions

Terminal	Description	RS485 API	Limited API	Full API
1	+10 V _{ref} Maximum load 10 mA		x	x
2	AI1 0-+10 V R _i = 200 kΩ		x*	x
3	GND	x	x	x
6	24 V _{out} ±20 %, max. load 50 mA	x	x	x
7	GND	x	x	x
8	DI1	x	x	x
9	DI2		x	x
10	DI3		x	x
A	A - RS485 Positive	x	x	x
B	B - RS485 Negative	x	x	x
4	AI2 0(4)-20 mA, R _i = 200 Ω			x
5	GND			x
13	GND			x
14	DI4			x
15	DI5			x
16	DI6			x
18	AO 0(4)-20 mA, R _i ≤ 500 Ω			x
20	D0 Open collector, max. load 48 V/50 mA			x
22	RO13-CM Max. switching load: 250 Vac/2 A or 250 Vdc/0.4 A			x
23	RO14-NO			x
24	RO22-NC	x	x	x
25	RO21-CM	x	x	x
26	RO24-NO			x

* Selectable V/mA with dip switch.

VACON 10 TYPE DESIGNATION CODE

VACON 0010-1L-0001-4-MACHINERY +OPTION CODES

Product	Input	Current	Voltage	Version	+Options
	phase rating		rating		

Default configuration: +SM03 +EMC4

+Options (factory installed)

Option	Order code	Description
Full API	+SM01	Full I/O configuration
Limited API	+SM02	Limited I/O configuration
RS485 API	+SM03 (default)	RS485 I/O configuration
EMC C2	+EMC2	C2 Level EMC, includes +QPES
EMC C4	+EMC4 (default)	C4 level EMC
PE Plate	+QPES	Grounding and cable clamping extension

Loose options

Option	Order code	Description
IP21 Cover	ENC-IP21-MIx	x = Frame size 1, 2 or 3
NEMA Type 1 Kit	ENC-IN01-MIx	x = Frame size 1, 2 or 3
MCA and USB Cable Kit	VACON-ADP-MCAA-KIT	Micro communication adapter with USB cable
MCA Adapter	VACON-ADP-MCAA	MCA Adapter only
USB Cable	CAB-USB/ RS485	USB cable only. For use with MCA or Vacon 100
Brake resistor MI2 & MI3*	BRR-0022-LD-5	Low duty
Brake resistor MI2 & MI3*	BRR-0022-HD-5	High duty

*Resistors not suitable for MI2/380-480 V and MI3/575 V version.

TECHNICAL DATA

Mains connection	Input voltage U_{in}	110...120 V, -15 %...+10 % 1~ 208...240 V, -15 %...+10 % 1~ 208...240 V, -15 %...+10 % 3~ 380...480 V, -15 %...+10 % 3~ 575 V, -15 %...+10 % 3~
	Input frequency	45...66 Hz
	Connection to mains	Once per minute or less (normal case)
	Output voltage	0... U_{in} [2 x U_{in} with 115 V drives]
Motor connection	Output current	Continuous rated current I_N at rated ambient temperature overload 1.5 x I_N max. 1 min/10 min
	Starting current / Torque	Current 2 x I_N for 2 secs in every 20 sec period Torque depends on motor
	Output frequency	0...320 Hz
	Frequency resolution	0.01 Hz
	Control method	Frequency Control U/f. Open loop sensorless vector control
Control characteristics	Switching frequency	1.5...16 kHz; Factory default 4 kHz [575 V model default 2 kHz]
	Braking torque	100 % x T_N with integrated brake chopper in 3-phase MI2 and MI3 frames 30 % x T_N with DC-braking. Dynamic flux braking available in all types
Ambient conditions	Ambient operating temperature	-10°C (no frost)...+50°C: rated loadability I_N (with options ENC-IP21-Mix and ENC-IN01-Mix ambient max. +40°C)
	Storage temperature	-40°C...+70°C
	Altitude	100 % load capacity (no derating) up to 1000 m 1 % derating for each 100 m above 1000 m; max. 2000 m
	Enclosure class	IP20
EMC	Immunity	Complies with EN61800-3 (2004)
	Emissions	208-240 V: EMC level C2: with an internal +EMC2 option 380-480 V: EMC level C2: with an internal +EMC2 option
Approvals	EN61800, C-Tick, Gost R, CB, CE, UL, cUL, IEC (not all versions, see unit nameplate for more detailed approvals)	

RATINGS AND DIMENSIONS

Supply voltage	AC drive type	Power		Motor current		Frame size	Dimensions W x H x D*	
		kW	HP	I_N (A)	$1.5 \times I_N$ (A)		mm	inches
110-120 VAC, 1-phase (North America only)	VACON0010-1L-0001-1	0.25	0.33	1.7	2.6	MI2	90 x 195 x 102	3.54 x 7.68 x 4.02
	VACON0010-1L-0002-1	0.37	0.5	2.4	3.6			
	VACON0010-1L-0003-1	0.55	0.75	2.8	4.2			
	VACON0010-1L-0004-1	0.75	1	3.7	5.6			
	VACON0010-1L-0005-1	1.1	1.5	4.8	7.2	MI3	100 x 255 x 109	3.94 x 10.04 x 4.29
208-240 VAC, 1-phase	VACON0010-1L-0001-2	0.25	0.33	1.7	2.6	MI1	66 x 160 x 99	2.60 x 6.30 x 3.90
	VACON0010-1L-0002-2	0.37	0.5	2.4	3.6			
	VACON0010-1L-0003-2	0.55	0.75	2.8	4.2			
	VACON0010-1L-0004-2	0.75	1	3.7	5.6			
	VACON0010-1L-0005-2	1.1	1.5	4.8	7.2	MI2	90 x 195 x 102	3.54 x 7.68 x 4.02
	VACON0010-1L-0007-2	1.5	2	7	10.5			
	VACON0010-1L-0009-2	2.2	3	9.6	14.4			
	VACON0010-1L-0011-2	2.2	3	11	16.5	MI3	100 x 255 x 109	3.94 x 10.04 x 4.29
208-240 VAC, 3-phase	VACON0010-3L-0001-2	0.25	0.33	1.7	2.6	MI1	66 x 160 x 99	2.60 x 6.30 x 3.90
	VACON0010-3L-0002-2	0.37	0.5	2.4	3.6			
	VACON0010-3L-0003-2	0.55	0.75	2.8	4.2			
	VACON0010-3L-0004-2	0.75	1	3.7	5.6			
	VACON0010-3L-0005-2	1.1	1.5	4.8	7.2	MI2	90 x 195 x 102	3.54 x 7.68 x 4.02
	VACON0010-3L-0007-2	1.5	2	7	10.5			
	VACON0010-3L-0011-2	2.2	3	11	16.5			
	VACON0010-3L-0012-4	5.5	7.5	12	18.0	MI3	100 x 255 x 109	3.94 x 10.04 x 4.29
380-480 VAC, 3-phase	VACON0010-3L-0001-4	0.37	0.5	1.3	2.0	MI1	66 x 160 x 99	2.60 x 6.30 x 3.90
	VACON0010-3L-0002-4	0.55	0.75	1.9	2.9			
	VACON0010-3L-0003-4	0.75	1	2.4	3.6			
	VACON0010-3L-0004-4	1.1	1.5	3.3	5.0			
	VACON0010-3L-0005-4	1.5	2	4.3	6.5	MI2	90 x 195 x 102	3.54 x 7.68 x 4.02
	VACON0010-3L-0006-4	2.2	3	5.6	8.4			
	VACON0010-3L-0008-4	3	5	7.6	11.4			
	VACON0010-3L-0009-4	4	5	9	13.5			
575 VAC, 3-phase (North America only)	VACON0010-3L-0012-4	5.5	7.5	12	18.0	MI3	100 x 255 x 109	3.94 x 10.04 x 4.29
	VACON0010-3L-0002-7	0.75	1	1.7	2.6			
	VACON0010-3L-0003-7	1.5	2	2.7	4.1			
	VACON0010-3L-0004-7	2.2	3	3.9	5.9			
	VACON0010-3L-0006-7	4	5	6.1	9.2			
	VACON0010-3L-0009-7	5.5	7.5	9	13.5			

* Please note that some options might increase the dimensions.

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