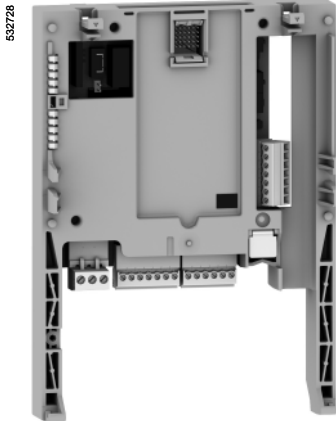


Variable speed drives for asynchronous motors

Altivar 71

Option: I/O extension cards

Presentation



VW3A3202

Altivar 71 drives can be specifically adapted to particular application areas by installing I/O extension cards.

Two models are available:

- Card with logic I/O featuring:
 - 1 relay logic output ("C/O" contact)
 - 4 x 24 V $\overline{\text{---}}$ positive or negative logic inputs
 - 2 x 24 V $\overline{\text{---}}$ open collector positive or negative logic outputs
 - 1 input for PTC probes

- Card with extended I/O featuring:
 - 1 differential current analog input 0°20 mA
 - 1 software-configurable voltage (0...10 V $\overline{\text{---}}$) or current (0...20 mA) analog input
 - 2 software-configurable voltage (± 10 V, 0...10 V $\overline{\text{---}}$) or current (0...20 mA) analog outputs
 - 1 relay logic output
 - 4 x 24 V $\overline{\text{---}}$ positive or negative logic inputs
 - 2 x 24 V $\overline{\text{---}}$ open collector positive or negative logic outputs
 - 1 input for PTC probes
 - 1 frequency control input

Characteristics

Logic I/O card VW3 A3 201

Internal supplies available		Short-circuit and overload protection: <ul style="list-style-type: none"> ■ 1 x 24 V $\overline{\text{---}}$ supply (min. 21 V, max. 27 V), maximum current 200 mA for the complete drive and I/O extension card assembly ■ 1 x 10.5 V $\overline{\text{---}}$ ($\pm 5\%$) supply for the reference potentiometer (1 to 10 kΩ), maximum current 10 mA
Configurable relay outputs	R3A, R3B, R3C	1 relay logic output, one "N/C" contact and one "N/O" contact with common point Minimum switching capacity: 3 mA for 24 V $\overline{\text{---}}$ Maximum switching capacity: <ul style="list-style-type: none"> ■ On resistive load ($\cos \varphi = 1$): 5 A for 250 V \sim or 30 V $\overline{\text{---}}$ ■ On inductive load ($\cos \varphi = 0.4$ and $L/R = 7$ ms): 2 A for 250 V \sim or 30 V $\overline{\text{---}}$ Electrical service life: 100,000 operations Maximum response time: 7 ms \pm 0.5 ms
Logic inputs	LI7...LI10	4 programmable logic inputs, 24 V $\overline{\text{---}}$, compatible with level 1 PLC, IEC 65A-68 standard Impedance: 3.5 k Ω Maximum voltage: 30 V Multiple assignment makes it possible to configure several functions on one input Maximum sampling time: 2 ms \pm 0.5 ms
	Positive logic (Source)	State 0 if ≤ 5 V or logic input not wired, state 1 if ≥ 11 V
	Negative logic (Sink)	State 0 if ≥ 16 V or logic input not wired, state 1 if ≤ 10 V
Logic outputs	LO1, LO2	2 x 24 V $\overline{\text{---}}$ logic outputs assignable as positive (Source) or negative (Sink) logic open collector type, compatible with level 1 PLC, standard IEC 65A-68 24 V $\overline{\text{---}}$ internal or 24 V $\overline{\text{---}}$ external power supply (min. 12 V, max. 30 V) Maximum current: 200 mA Logic output common (CLO) isolated from other signals Maximum sampling time: 2 ms \pm 0.5 ms. The active state is software-configurable as is a delay for each switching operation.
Input for PTC probes	TH1+/TH1-	1 input for a maximum of 6 PTC probes mounted in series: <ul style="list-style-type: none"> ■ Nominal value < 1.5 kΩ ■ Trip resistance 3 kΩ, reset value 1.8 kΩ ■ Short-circuit protection < 50 Ω
Maximum I/O wire size and tightening torque		1.5 mm ² (AWG 16) 0.25 Nm

Characteristics (continued)

Extended I/O card VW3 A3 202

Internal supplies available		<p>Short-circuit and overload protection:</p> <ul style="list-style-type: none"> ■ 1 x 24 V $\overline{\text{---}}$ supply (min. 21 V, max. 27 V), maximum current 200 mA for the complete drive and I/O extension card assembly ■ 1 x 10.5 V $\overline{\text{---}}$ ($\pm 5\%$) supply for the reference potentiometer (1 to 10 kΩ), maximum current 10 mA
Analog inputs AI	AI3+/AI3-	<p>1 X-Y mA differential current analog input by programming X and Y from 0 to 20 mA, with impedance 250 Ω</p> <p>Maximum sampling time: 5 ms \pm 1 ms</p> <p>Resolution: 11 bits +1 sign bit</p> <p>Accuracy: $\pm 0.6\%$ for a temperature variation of 60°C</p> <p>Linearity: $\pm 0.15\%$ of the maximum value</p>
	AI4	<p>1 software-configurable voltage or current analog input:</p> <ul style="list-style-type: none"> ■ Voltage analog input 0°10 V $\overline{\text{---}}$, impedance 30 kΩ (max. safe voltage 24 V) ■ X-Y mA current analog input by programming X and Y from 0 to 20 mA, with impedance 250 Ω <p>Maximum sampling time: 5 ms \pm 1 ms</p> <p>Resolution: 11 bits</p> <p>Accuracy: $\pm 0.6\%$ for a temperature variation of 60°C</p> <p>Linearity: $\pm 0.15\%$ of the maximum value</p>
Analog outputs	AO2, AO3	<p>2 software-configurable voltage or current analog outputs:</p> <ul style="list-style-type: none"> ■ voltage analog output ± 10 V $\overline{\text{---}}$, 0...10 V, minimum load impedance 470 Ω ■ X-Y mA current analog output by programming X and Y from 0 to 20 mA, maximum load impedance 500 W <p>Maximum sampling time: 5 ms \pm 1 ms</p> <p>Resolution: 10 bits</p> <p>Accuracy: $\pm 1\%$ for a temperature variation of 60°C</p> <p>Linearity: $\pm 0.2\%$ of the maximum value</p>
Configurable relay output	R4A, R4B, R4C	<p>1 relay logic output, one "N/C" contact and one "N/O" contact with common point</p> <p>Minimum switching capacity: 3 mA for 24 V $\overline{\text{---}}$</p> <p>Maximum switching capacity:</p> <ul style="list-style-type: none"> ■ On resistive load ($\cos \varphi = 1$): 5 A for 250 V \sim or 30 V $\overline{\text{---}}$ ■ On inductive load ($\cos \varphi = 0.4$ and L/R = 7 ms): 1.5 A for 250 V \sim or 30 V $\overline{\text{---}}$ <p>Electrical service life: 100,000 operations</p> <p>Maximum response time: 10 ms \pm 1 ms</p>
Logic inputs	LI11...LI14	<p>4 programmable logic inputs, 24 V $\overline{\text{---}}$, compatible with level 1 PLC, IEC 65A-68 standard</p> <p>Impedance: 3.5 kΩ</p> <p>Maximum voltage: 30 V</p> <p>Multiple assignment makes it possible to configure several functions on one input</p> <p>Maximum sampling time: 5 ms \pm 1 ms</p>
	Positive logic (Source)	State 0 if ≤ 5 V or logic input not wired, state 1 if ≥ 11 V
	Negative logic (Sink)	State 0 if ≥ 16 V or logic input not wired, state 1 if ≤ 10 V
Logic outputs	LO3, LO4	<p>2 x 24 V $\overline{\text{---}}$ logic outputs assignable as positive (Source) or negative (Sink) logic open collector type, compatible with level 1 PLC, standard IEC 65A-68</p> <p>Maximum voltage: 30 V</p> <p>Maximum current: 200 mA</p> <p>Logic output common (CLO) isolated from other signals</p> <p>Maximum sampling time: 5 ms \pm 1 ms.</p> <p>The active state is software-configurable as is a delay for each switching operation.</p>
Input for PTC probes	TH2+/TH2-	<p>1 input for a maximum of 6 PTC probes mounted in series:</p> <ul style="list-style-type: none"> ■ Nominal value < 1.5 kΩ ■ Trip resistance 3 kΩ, reset value 1.8 kΩ ■ Short-circuit protection < 50 Ω
Frequency control input	RP	<p>Frequency range: 0°30 kHz</p> <p>Cyclic ratio: 50% \pm 10%</p> <p>Maximum sampling time: 5 ms \pm 1 ms</p> <p>Maximum input voltage 30 V, 15 mA</p> <p>Add a resistor if the input voltage is greater than 5 V (510 Ω for 12 V, 910 Ω for 15 V, 1.3 kΩ for 24 V)</p> <p>State 0 if < 1.2 V, state 1 if > 3.5 V</p>
Maximum I/O wire size and tightening torque		<p>1.5 mm² (AWG 16)</p> <p>0.25 Nm</p>

References

I/O extension cards (1)

Description	Reference	Weight kg
Logic I/O card	VW3 A3 201	0.300
Extended I/O card	VW3 A3 202	0.300

(1) The Altivar 71 cannot support more than one I/O card with the same reference.
Consult the summary tables of possible drive, option and accessory combinations,
see pages 60293/2 to 60293/9.