



**DRIVE CENTRE**   
Industrial Automation Systems Integrators

57 Galaxy Blvd., Units 1 & 2, Toronto, ON M9W 5P1  
TEL: (416) 231-6767  
[www.drivecentre.ca](http://www.drivecentre.ca)

# AC500-eCo

## Entry level PLC solutions

<a href="#">Key features</a>	<a href="#">3/36</a>
<a href="#">Ordering data</a>	<a href="#">3/37</a>
<a href="#">Technical data</a>	<a href="#">3/40</a>
<a href="#">System data</a>	<a href="#">3/47</a>

# AC500-eCo

## Key features

3

- Up to 10 I/O modules connected to the CPU
- Compatible with all standard I/O modules (S500 and S500-eCo)
- Digital I/O module with configurable I/O available



High performance variant with large memory available

- Three different types of terminal blocks available
- Integrated onboard I/O
- AC versions with integrated power supply

Comprehensive communication options:

- Ethernet for communication and web server for user defined visualization
- Up to two serial ports for decentralized I/O and communication

# AC500-eCo

## Ordering data



PM554

### AC500-eCo CPUs

- 1 RS485 serial interface (2nd is optional)
- Centrally expandable with up to 10 I/O modules (standard S500 and/or S500-eCo modules can be mixed)
- Optional SD card adapter for data storage and program backup
- Variants with integrated Ethernet (Ethernet includes web server)
- Minimum cycle time per instruction: Bit 0.08 µs, Word 0.1 µs, Float-point 1.2 µs.

Program memory	Onboard I/Os	Relay / Transistor outputs	Integrated communication	Power supply	Type	Order code	Price	Weight (1 pce)
kB	DI/DO/AI/AO							kg

#### PM554: digital I/Os

128	8 / 6 / - / -	Transistor	-	24 V DC	PM554-TP	1SAP120600R0001		0.300
128	8 / 6 / - / -	Relay	-	24 V DC	PM554-RP	1SAP120700R0001		0.400
128	8 / 6 / - / -	Relay	-	100-240 V AC	PM554-RP-AC	1SAP120800R0001		0.400
128	8 / 6 / - / -	Transistor	Ethernet	24 V DC	PM554-TP-ETH	1SAP120600R0071		0.400

#### PM556: digital I/Os, 512 kB program memory

512	8 / 6 / - / -	Transistor	Ethernet	24 V DC	PM556-TP-ETH	1SAP121200R0071		0.400
-----	---------------	------------	----------	---------	--------------	-----------------	--	-------

#### PM564: digital and analog I/Os (1)

128	6 / 6 / 2 / 1	Transistor	-	24 V DC	PM564-TP	1SAP120900R0001		0.300
128	6 / 6 / 2 / 1	Relay	-	24 V DC	PM564-RP	1SAP121000R0001		0.400
128	6 / 6 / 2 / 1	Relay	-	100-240 V AC	PM564-RP-AC	1SAP121100R0001		0.400
128	6 / 6 / 2 / 1	Transistor	Ethernet	24 V DC	PM564-TP-ETH	1SAP120900R0071		0.300
128	6 / 6 / 2 / 1	Relay	Ethernet	24 V DC	PM564-RP-ETH	1SAP121000R0071		0.400
128	6 / 6 / 2 / 1	Relay	Ethernet	100-240 V AC	PM564-RP-ETH-AC	1SAP121100R0071		0.400

#### PM566: digital and analog I/Os, 512 kB program memory (1)

512	6 / 6 / 2 / 1	Transistor	Ethernet	24 V DC	PM566-TP-ETH	1SAP121500R0071		0.400
-----	---------------	------------	----------	---------	--------------	-----------------	--	-------

Terminal blocks (9 and 11 poles) are necessary for each AC500-eCo I/O. The terminal blocks must be ordered separately.

(1) All analog inputs on PM564 and PM566 can be configured as digital inputs.



PM556



PM564



PM566

# AC500-eCo

## Ordering data

3



DI561

### S500-eCo I/O modules

- For central expansion of the AC500 or AC500-eCo CPUs
- For decentralized expansion in combination with communication interface module DC551-CS31, PROFINET® CI50x modules, CI592-CS31, PROFIBUS® modules CI54x, and CANopen® modules CI58x (not usable with DC505-FBP module and CI590-CS31-HA).

### Digital I/O

- DC: Channels can be configured individually as inputs or outputs.

Number of DI/DO/DC	Input signal	Output type	Output signal	Terminal block required		Type	Order code	Price	Weight (1 pce) kg
				9 poles	11 poles				
8 / - / -	24 V DC	-	-	1	-	DI561	1TNE968902R2101		0.12
16 / - / -	24 V DC	-	-	1	1	DI562	1TNE968902R2102		0.12
8 / - / -	100-240 V AC	-	-	1	1	DI571	1TNE968902R2103		0.15
16 / - / -	100-240 V AC	-	-	1	1	DI572	1SAP230500R0000		0.19
- / 8 / -	-	Transistor	24 V DC, 0.5 A	-	1	DO561	1TNE968902R2201		0.12
- / 16 / -	-	Transistor	24 V DC, 0.5 A	1	1	DO562	1SAP230900R0000		0.16
- / 8 / -	-	Relay	24 V DC, 120 / 240 V AC, 2 A	-	1	DO571	1TNE968902R2202		0.15
- / 8 / -	-	Triac	100-240 V AC, 0.3 A	1	1	DO572	1TNE968902R2203		0.12
- / 16 / -	-	Relay	24 V DC, 120 / 240 V AC, 2 A	1	1	DO573	1SAP231300R0000		0.19
8 / 8 / -	24 V DC	Transistor	24 V DC, 0.5 A	1	1	DX561	1TNE968902R2301		0.12
8 / 8 / -	24 V DC	Relay	24 V DC, 120 / 240 V AC, 2 A	1	1	DX571	1TNE968902R2302		0.15
- / - / 16	24 V DC	Transistor	24 V DC, 0.1A	HE10-20	-	DC561	1TNE968902R2001		0.12
- / - / 16	24 V DC	Transistor	24 V DC, 0.5 A	1	1	DC562	1SAP231900R0000		0.15

Terminal blocks (9 or 11 poles) are necessary for each S500-eCo I/O. The terminal blocks must be ordered separately.



AI562

### Analog I/O

- Each channel can be configured individually
- Resolution:
  - AI561, AO561, AX561: 12 bits/11 bits + sign
  - AI562, AI563: 15 bits + sign.

Number of AI/AO	Input signal	Output signal	Terminal block required		Type	Order code	Price	Weight (1 pce) kg
			9 poles	11 poles				
4 / 0	±2.5 V, ±5 V, 0...5 V, 0...10 V, 0...20 mA, 4...20 mA	-	1	1	AI561	1TNE968902R1101		0.12
2 / 0	PT100, PT1000, Ni100, Ni1000, Resistance: 150 Ω, 300 Ω	-	-	1	AI562	1TNE968902R1102		0.12
4 / 0	S, T, R, E, N, K, J, Voltage range: ±80 mV	-	1	1	AI563	1TNE968902R1103		0.12
0 / 2	-	-10...+10 V, 0...20 mA, 4...20 mA	-	1	AO561	1TNE968902R1201		0.12
4 / 2	±2.5 V, ±5 V, 0...5 V, 0...10 V, 0...20 mA, 4...20 mA	-10...+10 V, 0...20 mA, 4...20 mA	1	1	AX561	1TNE968902R1301		0.13

Terminal blocks (9 or 11 poles) are necessary for each S500-eCo I/O. The terminal blocks must be ordered separately.



AX561

# AC500-eCo

## Ordering data



FM562

### Positioning module

- For central expansion of the AC500 or AC500-eCo CPUs
- For decentralized expansion in combination with communication interface modules CI50X-PNIO or CI54X-DP
- The FM562 module provides Pulse Train Outputs for 2 axes. Profile generator integrated.

Number of axis	Input signal	Output signal	Terminal block required		Type	Order code	Price	Weight (1 pce) kg
			9 poles	11 poles				
2	4 digital inputs 24 V (2 per axis)	4 pulse outputs RS422 (2 per axis)	1	1	FM562	1SAP233100R0001		0.15

Terminal blocks (9 or 11 poles) are necessary for each S500-eCo I/O. The terminal blocks must be ordered separately. Library PS552-MC-E is required for programming this module.

### Accessories

Description	Type	Order code	Price	Weight (1 pce) kg
SD Memory Card 2 GB needs the MC503 option	MC502	1SAP180100R0001		0.020
SD Memory Card adapter	MC503	1TNE968901R0100		0.010
Programming cable USB => RS485 Sub-D, 3 m	TK503	1TNE968901R1100		0.400
Programming cable USB => RS485 Terminal block, 3 m	TK504	1TNE968901R2100		0.400
RS485 isolator, Sub-D 9 poles / Terminal 5 poles for COM1	TK506	1SAP186100R0001		0.080
Real time clock option board, battery CR2032 not included	TA561-RTC (1)	1SAP181400R0001		0.007
RS485 serial adapter COM2, pluggable screw terminal block included	TA562-RS	1TNE968901R4300		0.007
Combined Real Time Clock option with RS485 serial adapter COM2, pluggable screw terminal block, included	TA562-RS-RTC (1)	1SAP181500R0001		0.012
Wall Mounting Accessory for AC500-eCo CPU and S500-eCo I/O modules (100 pieces per case)	TA566	1TNE968901R3107		0.450
Set of accessories: 6 x plastic cover for option slot, 6 x 5 pole terminal block, 6 x 5 pole screw terminal block for COM2 serial interface.	TA570	1TNE968901R3203		0.090
Digital input simulator for onboard I/O of CPU, 6 x switch, 24 V DC	TA571-SIM	1TNE968903R0203		0.040

(1) Standard battery CR 2032 has to be purchased separately.

### Terminal blocks for S500-eCo I/O modules and AC500-eCo CPUs

Number of poles	Connection type	Cable entry	Type	Order code	Price	Weight (1 pce) kg
9	Screw	Side	TA563-9	1TNE968901R3101		0.017
11	Screw	Side	TA563-11	1TNE968901R3102		0.020
9	Screw	Front	TA564-9	1TNE968901R3103		0.026
11	Screw	Front	TA564-11	1TNE968901R3104		0.035
9	Spring	Front	TA565-9	1TNE968901R3105		0.016
11	Spring	Front	TA565-11	1TNE968901R3106		0.020



Only ABB terminal blocks must be used with AC500-eCo. Sales package for these terminal blocks = 6.



TK506



TA561-RTC



TA562-RS



TA562-RS-RTC



TA570



TA565-9



TA564-11



TA563-9

# AC500-eCo

## Technical data

### AC500-eCo CPUs

Type	PM554-TP	PM554-RP	PM554-RP-AC		PM554-TP-ETH	PM556-TP-ETH
Supply voltage	24 V DC		100-240 V AC		24 V DC	
Current consumption on	24 V DC		100 V AC	240 V AC	24 V DC	
Min. typ. (module alone)	0.06 A	0.08 A	0.02 A	0.012 A	0.07 A	0.07 A
Max. typ. (I/Os)	0.18 A	0.22 A	0.2 A	0.11 A	0.19 A	0.19 A
Program memory	128 kB					512 kB
Integrated data memory	14 kB thereof 2 kB saved					130 kB thereof 2 kB saved
Web server's data for user RAM disk	-				512 kB	1024 kB
Data buffering (of saved data)	flash memory					
Real-time clock (option with battery back-up) (1)	●					
<b>Program execution</b>						
Cyclical	●					
Time controlled	●					
Multi tasking	no, 1 task + 1 interrupt task max.					
Interruption	●					
User program protection by password	●					
<b>Cycle time for 1 instruction (minimum)</b>						
Binary	0.08 µs					
Word	0.1 µs					
Floating	1.2 µs					
<b>Onboard digital inputs</b>						
Channels	8 (including 2 counter inputs)					
Signal voltage	24 V DC					
<b>Onboard digital outputs</b>						
Channels	6 (including 2 PWM outputs)					
Relay / Transistor	Transistor	Relay	Relay	Relay	Transistor	Transistor
Rated voltage	24 V DC	240 V AC	240 V AC	240 V AC	24 V DC	24 V DC
Nominal current per channel	0.5 A	2 A resistive	2 A resistive	2 A resistive	0.5 A	0.5 A
<b>Onboard analog outputs</b>						
Channels	-					
signal ranges	-					
<b>Onboard analog inputs</b>						
Channels	-					
signal ranges	-					
<b>Max. number of centralized inputs/outputs</b>						
Max. number of extension modules on I/O bus	up to max. 10 (S500 and/or S500-eCo modules allowed)					
Digital	inputs	320 + 8				
	outputs	320 + 6				
Analog	inputs	160				
	outputs	160				
<b>Max. number of decentralized inputs/outputs</b>						
I/O modules	decentralized	on CS31 bus: up to 31 stations with up to 120 DI / 120 DO each or up to 32 AI/32 AO per station				
<b>Internal interfaces</b>						
<b>COM1</b>						
RS485	●					
Sub-D connection	●					
Programming, Modbus, ASCII, CS31	●					
<b>COM2 (option) (2)</b>						
RS485	●					
Terminal block	●					
Programming, Modbus, ASCII	●					
<b>Ethernet</b>						
RJ45	-				●	
Ethernet functions: Programming, Modbus TCP/IP, UDP/IP, integrated Web server, DHCP, FTP server, SNTIP client	-				●	
SMTP	-				●	
<b>RUN/STOP switch</b>	●					
<b>LED display for power, status and error</b>	●					
<b>Approvals</b>	see detailed overview page 154 or <a href="http://www.abb.com/plc">www.abb.com/plc</a>					

(1) Real-time clock requires optional TA561-RTC or TA562-RS-RTC.

(2) COM2 requires TA562-RS-RTC or TA562-RS.



# AC500-eCo

## Technical data

### AC500-eCo CPUs

Type	PM564-TP	PM564-RP	PM564-RP-AC	PM564-TP-ETH	PM566-TP-ETH	PM564-RP-ETH	PM564-RP-ETH-AC		
Supply voltage	24 V DC		100-240 V AC	24 V DC			100-240 V AC		
Current consumption on	24 V DC		100 V AC; 240 V AC	24 V DC			100 V AC; 240 V AC		
Min. typ. (module alone)	0.095 A	0.11 A	0.02 A	0.011 A	0.10 A	0.10 A	0.023 A	0.014 A	
Max. typ. (I/Os)	0.21 A	0.24 A	0.21 A	0.125 A	0.22 A	0.22 A	0.25 A	0.22 A	0.13 A
Program memory	128 kB				512 kB	128 kB	0.22 A	0.13 A	
Integrated data memory	14 kB thereof 2 kB saved				130 kB thereof 2 kB saved	14 kB thereof 2 kB saved			
Web server's data for user RAM disk					512 kB	1024 kB	512 kB		
Data buffering (of saved data)	flash memory								
Real-time clock (option with battery back-up) (1)	●								
<b>Program execution</b>									
Cyclical	●								
Time controlled	●								
Multi tasking	no, 1 task + 1 interrupt task max.								
Interruption	●								
User program protection by password	●								
<b>Cycle time for 1 instruction (minimum)</b>									
Binary	0.08 µs								
Word	0.1 µs								
Floating	1.2 µs								
<b>Onboard digital inputs</b>									
Channels	6 (including 2 counter inputs)								
Signal voltage	24 V DC								
<b>Onboard digital outputs</b>									
Channels	6 (including 2 PWM outputs)								
Relay / Transistor	Transistor	Relay	Relay	Transistor	Transistor	Relay	Relay		
Rated voltage	24 V DC	240 V AC	240 V AC	24 V DC	24 V DC	240 V AC	240 V AC		
Nominal current per channel	0.5 A	2 A resistive	2 A resistive	0.5 A	0.5 A	2 A resistive	2 A resistive		
<b>Onboard analog inputs</b>									
Channels	2								
signal ranges	0...10 V / can be configured as digital input 24 V DC								
<b>Onboard analog outputs</b>									
Channels	1								
signal ranges	0...10 V / 0...20 mA / 4...20 mA								
<b>Max. number of centralized inputs/outputs</b>									
Max. number of extension modules on I/O bus	up to max. 10 (S500 and/or S500-eCo modules allowed)								
Digital	inputs	320 + 8							
	outputs	320 + 6							
Analog	inputs	160 + 2							
	outputs	160 + 1							
<b>Max. number of decentralized inputs/outputs</b>									
I/O modules	decentralized	on CS31 bus: up to 31 stations with up to 120 DI / 120 DO each or up to 32 AI/32 AO per station							
<b>Internal interfaces</b>									
<b>COM1</b>									
RS485	●								
Sub-D connection	●								
Programming, Modbus, ASCII, CS31	●								
<b>COM2 (option) (2)</b>									
RS485	●								
Terminal block	●								
Programming, Modbus, ASCII	●								
<b>Ethernet</b>									
RJ45	-				●				
Ethernet functions: Programming, Modbus TCP/IP, UDP/IP, integrated Web server, DHCP, FTP server, SNMP client	-				●				
SMTP						●			
RUN/STOP switch	●								
LED display for power, status and error	●								
Approvals	see detailed overview page 154 or <a href="http://www.abb.com/plc">www.abb.com/plc</a>								

(1) Real-time clock requires optional TA561-RTC or TA562-RS-RTC.

(2) COM2 requires TA562-RS-RTC or TA562-RS.



# AC500-eCo

## Technical data

### Digital S500-eCo I/O modules

Type	DI561	DI562	DI571	DI572	DO561	DO562
Supply voltage	-	-	-	-	24 V DC	24 V DC
Current consumption on UP Max. typ. (without load current)	-	-	-	-	0.005 A	0.005 A

#### Number of channels per module

Digital	inputs	8	16	8 (AC)	16 (AC)	-	-
	outputs	-	-	-	-	8	16
Configurable as Input or Output DC		-	-	-	-	-	-
Relay / Transistor		-	-	-	-	Transistor	Transistor

#### Additional configuration of channels as:

Fast Counter	no					not applicable
--------------	----	--	--	--	--	----------------

#### Digital inputs

Input signal voltage	24 V DC		100-240 V AC		-	-
Input time delay	typically 4...8 ms		typically 15 ms / 30 ms		-	-

#### Input current per channel

At Input voltage	24 V DC	typically 5 mA	-	-	-	-
	5 V DC	typically 1 mA	-	-	-	-
	15 V DC	> 2.5 mA	-	-	-	-
	30 V DC	< 8 mA	-	-	-	-
	40 V AC	-	-	< 3 mA	-	-
	164 V AC	-	-	> 6 mA	-	-

#### Output current

Nominal current per channel	-	-	-	-	0.5 A at UP = 24 V	-
Maximum (total current of all channels)	-	-	-	-	4 A	8 A
Residual current at signal state 0	-	-	-	-	< 0.5 mA	-
Demagnetization when switching off inductive loads	-	-	-	-	must be provided externally	

#### Switching frequency

For resistive load	-	-	-	-	limited by CPU cycle time	
For inductive load	-	-	-	-	max. 0.5 Hz	
For lamp load	-	-	-	-	max. 11 Hz at max. 5 W	
Short circuit / overload proofness	-	-	-	-	no	
Overload indication (I > 0.7 A)	-	-	-	-	no	
Output current limiting	-	-	-	-	no	
Proofness against reverse feeding of 24 V signals	-	-	-	-	no	

#### Contact rating

For resistive load, max.	-	-	-	-	-	-
For inductive load, max.	-	-	-	-	-	-
For lamp load	-	-	-	-	-	-

#### Lifetime (switching cycles)

Mechanical lifetime	-	-	-	-	-	-
Lifetime under load	-	-	-	-	-	-

#### Maximum cable length for connected process signals

Cable	shielded	500 m				
	unshielded	300 m			150 m	

#### Potential isolation

Per module		●	●	●	●	●
Between the channels	input	-	per group of 8	●	per group of 8	-
	output	-	-	-	-	-
Voltage supply for the module's logic	internal via I/O bus					

#### Fieldbus connection

Suitable communication interface module	CI501-PNIO, CI502-PNIO, CI504-PNIO, CI506-PNIO, CI541-DP, CI542-DP, CI581-CN, CI582-CN, DC551-CS31, CI592-CS31
---	--

# AC500-eCo

## Technical data

### Digital S500-eCo I/O modules

Type	DO571	DO572	DO573
Supply voltage	24 V DC		
Current consumption on UP Max. typ. (without load current)	0.050 A	-	0.050 A
<b>Number of channels per module</b>			
Digital			
inputs	-	-	-
outputs	8	8	16
Configurable as Input or Output DC	-	-	-
Relay / Transistor	Relay	triac (AC)	Relay
<b>Process voltage</b>			
DC	24 V	-	-
<b>Digital inputs</b>			
Input signal voltage	-	-	-
Input time delay	-	-	-
<b>Input current per channel</b>			
At Input voltage			
24 V DC	-	-	-
5 V DC	-	-	-
15 V DC	-	-	-
30 V DC	-	-	-
<b>Output current</b>			
Nominal current per channel	2 A (24 V DC / 120 V AC / 240 V AC, resistive load)	0.3 A at 100...240 V AC	2 A (24 V DC / 120 V AC / 240 V AC, resistive load)
Maximum (total current of all channels)	2 x 8 A	2.4 A / 8 x 0.3 A	max 10 A per group (20 A per module)
Residual current at signal state 0	-	1.1 mA rms at 132 V AC and 1.8 mA rms at 264 V AC	-
Demagnetization when switching off inductive loads	must be performed externally		
<b>Switching frequency</b>			
For resistive load	1 Hz max.	10 Hz max.	1 Hz max.
For inductive load	-	-	-
For lamp load	1 Hz max.	10 Hz max.	1 Hz max.
Short circuit / overload proofness	no		
Overload indication (I > 0.7 A)	no		
Output current limiting	no		
Proofness against reverse feeding of 24 V signals	yes	-	yes
<b>Contact rating</b>			
For resistive load, max.	2 A	0.3 A	2 A
For inductive load, max.	-	-	-
For lamp load	200 W at 230 V AC 30 W at 24 V DC	-	200 W at 230 V AC 30 W at 24 V DC
<b>Lifetime (switching cycles)</b>			
Mechanical lifetime	100 000	-	100 000
Lifetime under load	100 000 at rated load	-	100 000 at rated load
<b>Maximum cable length for connected process signals</b>			
Cable			
shielded	500 m		
unshielded	150 m		
<b>Potential isolation</b>			
Per module	between outputs and logic	●	between outputs and logic
Between the channels			
input	-	-	-
output	per group of 4	●	per group of 8
Voltage supply for the module's logic	internal via I/O bus		
<b>Fieldbus connection</b>			
Suitable communication interface module	CI501-PNIO, CI502-PNIO, CI504-PNIO, CI506-PNIO, CI541-DP, CI542-DP, CI581-CN, CI582-CN, DC551-CS31, CI592-CS31		

# AC500-eCo

## Technical data

### Digital S500-eCo I/O modules

Type		<b>DX561</b>	<b>DX571</b>	<b>DC561</b>	<b>DC562</b>
Supply voltage		24 V DC			
Current consumption on UP					
Max. typ. (without load current)		0.005 A	0.050 A	0.010 A	0.010 A
<b>Number of channels per module</b>					
Digital	inputs	8	8	-	-
	outputs	8	8	-	-
Configurable as Input or Output DC		-	-	16	16
Relays / Transistor		Transistor	Relay	Transistor	Transistor
<b>Process voltage</b>					
DC		24 V	24 V	24 V	24 V
<b>Digital inputs</b>					
Input signal voltage		24 V DC	24 V DC	24 V DC	24 V DC
Input time delay		typically 4...8 ms			typically 8 ms
<b>Input current per channel</b>					
At Input voltage	<b>24 V DC</b>	typically 5 mA	typically 5 mA	typically 4 mA	typically 5 mA
	<b>5 V DC</b>	< 1 mA	< 1 mA	< 1 mA	typically 1 mA
	<b>15 V DC</b>	> 2.5 mA	> 2.5 mA	> 2.5 mA	> 2.5 mA
	<b>30 V DC</b>	< 6.5 mA	< 6.5 mA	< 6 mA	< 8 mA
<b>Output current</b>					
Nominal current per channel		0.5 A at UP = 24 V DC	2 A (24 V DC / 120 V AC / 240 V AC, resistive load)	0.1 A at UP = 24 V DC	0.5 A at UP = 24 V DC
Maximum (total current of all channels)		4 A	2 x 8 A	1.6 A	8 A
Residual current at signal state 0		< 0.5 mA	-	< 0.5 mA	< 0.5 mA
Demagnetization when switching off inductive loads		must be performed externally			
<b>Switching frequency</b>					
For resistive load		Limited by CPU cycle time	1Hz max.	Limited by CPU cycle time	
For inductive load		0.5 Hz max.	-	0.5 Hz max.	0.5 Hz max.
For lamp load		11 Hz max. at max. 5 W	1 Hz max.	-	11 Hz max. at max. 5 W
Short circuit / overload proofness		no			
Overload indication (I > 0.7 A)		no			
Output current limiting		no			
Proofness against reverse feeding of 24 V signals		no	yes	no	no
<b>Contact rating</b>					
For resistive load, max.		-	2 A	-	-
For inductive load, max.		-	-	-	-
For lamp load		-	200 W at 230 V AC 30 W at 24 V DC	-	-
<b>Lifetime (switching cycles)</b>					
Mechanical lifetime		-	100 000	-	-
Lifetime under load		-	100 000 at rated load	-	-
<b>Maximum cable length for connected process signals</b>					
Cable	shielded	500 m			
	unshielded	150 m			
<b>Potential isolation</b>					
Per module		●	-	●	●
Between the channels	input	-	-	-	-
	output	-	per group of 4	-	-
Voltage supply for the module's logic		internal via I/O bus			
<b>Fieldbus connection</b>					
Suitable communication interface module		CI501-PNIO, CI502-PNIO, CI504-PNIO, CI506-PNIO, CI541-DP, CI542-DP, CI581-CN, CI582-CN, DC551-CS31, CI592-CS31			

# AC500-eCo

## Technical data

### Analog S500-eCo I/O modules

Type		AI561	AO561	AX561	AI562	AI563
Supply voltage		24 V DC				
Current consumption on UP						
Max. typ. (without load current)		0.100 A	0.100 A	0.140 A	0.040 A	0.100 A
<b>Number of channels per module</b>						
Analog	inputs	4	–	4	2	4
	outputs	–	2	2	–	–
<b>Inputs, individually configurable</b>						
-2.5...+2.5 V	11 bits + sign	●	–	●	–	–
-5...+5 V	11 bits + sign	●	–	●	–	–
-10...+10 V	11 bits + sign	–	–	–	–	–
0...5 V	12 bits	●	–	●	–	–
0...10 V	12 bits	●	–	●	–	–
0...20 mA, 4...20 mA	12 bits	●	–	●	–	–
<b>RTD</b>						
Pt100		–	–	–	●	–
	-50...+400 °C (2/3-wire)	–	–	–	●	–
Pt1000		–	–	–	●	–
	-50...+400 °C (2/3-wire)	–	–	–	●	–
Ni100 / Ni1000		–	–	–	●	–
	-50...+150 °C (2/3-wire)	–	–	–	●	–
Resistor	0...150 Ω/0...300 Ω	–	–	–	●	–
Thermocouple	Types J, K, T, N, S, E, R	–	–	–	–	●
Voltage	-80...+80 mV	–	–	–	–	●
<b>Outputs, individually configurable</b>						
-10...+10 V		–	●	●	–	–
0...20 mA		–	●	●	–	–
4...20 mA		–	●	●	–	–
<b>Potential isolation</b>						
Per module		–	–	–	●	●
<b>Fieldbus connection</b>						
Suitable communication interface module		CI501-PNIO, CI502-PNIO, CI504-PNIO, CI506-PNIO, CI541-DP, CI542-DP, CI581-CN, CI582-CN, DC551-CS31, CI592-CS31				

# AC500-eCo

## Technical data

### FM562 positioning module

The FM562 module contains Pulse Train Outputs for 2 axes. Profile generator for simple motion control tasks are integrated. The RS422 outputs allow a direct connection to Stepper- or Servo drives. Function blocks in PLCopen® motion control style allow the integration of the module in an application. These function blocks are contained in the library PS552-MC-E.

<b>Type</b>	<b>FM562</b>	
<b>Functionality</b>		
<b>Number of axis</b>	2	
<b>Digital inputs</b>	2 digital inputs per axis Function: for axis enable or limit switch	
<b>Pulse outputs</b>	Modes cw/ccw or pulse/direction Built in profile generators	
<b>Data of the digital inputs</b>		
<b>Signal voltage</b>	24 V DC	
<b>Input current at 24 V DC</b>	typically 5 mA	
<b>Potential isolation</b>	by groups of 2	
<b>Data of pulse outputs</b>		
<b>Signal</b>	RS422 (differential)	
<b>Frequency range</b>	0...250 kHz	
<b>Potential isolation</b>	RS422 outputs of both axis in one group isolated against the inputs, the process voltage and the PLC CPU logic	
<b>Maximum cable length for digital inputs</b>		
<b>Cable</b>	shielded	500 m
	unshielded	300 m
<b>Maximum cable length for pulse outputs</b>		
<b>Cable</b>	shielded	300 m
	unshielded	30 m
<b>Process voltage UP</b>		
<b>Nominal voltage</b>	24 V DC	
<b>Current consumption on UP</b>	typically 0.04 A	
<b>Reverse polarity protection</b>	●	
<b>Potential isolation</b>		
<b>Per module</b>	●	
<b>Voltage supply for the internal logic</b>	From UP / ZP with isolation	
<b>Fieldbus connection</b>		
<b>Suitable communication interface module</b>	CI501-PNIO, CI502-PNIO, CI504-PNIO, CI506-PNIO, CI541-DP, CI542-DP	

# AC500-eCo

## System data

### Environmental conditions

#### Process and supply voltages

24 V DC	Process and supply voltage	24 V DC (-15 %, +20 % without ripple)
	Absolute limits	19.2...30 V inclusive ripple
	Ripple	< 5 %
	Protection against reverse polarity	10 s
120 V AC	Line voltage	120 V AC (-15 %, +10 %)
	Frequency	47...62.4 Hz / 50...60 Hz (-6 %, +4 %)
230 V AC	Line voltage	230 V AC (-15 %, +10 %)
	Frequency	47...62.4 Hz / 50...60 Hz (-6 %, +4 %)
120–240 V AC	Wide-range supply	
	Line voltage	102...264 V / 120...240 V (-15 %, +10 %)
	Frequency	47...62.4 Hz / 50...60 Hz (-6 %, +4 %)

#### Allowed interruptions of power supply

DC supply	Interruption	< 10 ms, time between 2 interruptions > 1 s, PS2
AC supply	Interruption	< 0.5 periods, time between 2 interruptions > 1 s

**Important:** Exceeding the maximum power supply voltage (>30 V DC) for process or supply voltages could lead to unrecoverable damage of the system. The system could be destroyed. The creepage distances and clearances meet the requirements of the overvoltage category II, pollution degree 2. For the supply of the modules, power supply units according to PELV specifications must be used.

#### Climatic conditions

Temperature	Operation	0...60 °C (horizontal mounting of modules) 0...40 °C (vertical mounting of modules and output load reduced to 50 % per group)
	Storage	-40...+70 °C
	Transport	-40...+70 °C
Humidity	Without condensation	Max. 95 %
Air pressure	Operation	> 800 hPa / < 2000 m
	Storage	> 660 hPa / < 3500 m

#### Electromagnetic Compatibility

Radiated emission (radio disturbances)	Acc. to IEC61000-6-4
Conducted emission (radio disturbances)	Acc. to IEC61000-6-4
Electrostatic discharge (ESD)	Acc. to EN 61000-4-2, zone B, criterion B
Fast transient interference voltages (burst)	Acc. to EN 61000-4-4, zone B, criterion B
High energy transient interference voltages (surge)	Acc. to EN 61000-4-5, zone B, criterion B
Influence of radiated disturbances	Acc. to IEC 61000-4-3, zone B, criterion A
Influence of line-conducted interferences	Acc. to IEC 61000-4-6, zone B, criterion A

In order to prevent operating malfunctions, it is recommended, that the operating personnel discharge themselves prior to touching communication connectors or perform other suitable measures to reduce effects of electrostatic discharges. The connector of the I/O-Bus must not be touched during operation.

#### Mechanical data

Wiring method	Available types of terminal	Spring terminals, screw terminals
Degree of protection		IP 20 (if all terminal screws are tightened)
Vibration resistance		Acc. to IEC 61131-2
Shock resistance		Acc. to IEC 60068-2-27
Assembly position	Horizontal	no derating
	Vertical	max. ambient temp. 40°C and output load reduced to 50% per group
Assembly on DIN rail		Acc. to IEC 60715
Assembly with screws	DIN rail type	35 mm, depth 7.5 mm or 15 mm
	Screw diameter	4 mm
	Fastening torque	1.2 Nm

#### Main dimensions mm, inches



# AC500-eCo

## System data

### Environmental tests

#### Climatic and mechanical tests

<b>Storage</b>	Cold withstand test	IEC 60068-2-1 Test Ab: cold withstand test -40 °C / 16 h
	Dry heat withstand test	IEC 60068-2-2 Test Bb: dry heat withstand test +70 °C / 16 h
<b>Humidity</b>	Damp heat test	IEC 60068-2-30 Test Db: Cyclic (12 h / 12 h) Damp-Heat Test 55 °C, 93 % r. H. / 25 °C, 95 % r. H., 2 cycles
	<b>Insulation Test</b>	Acc. to IEC 61131-2
<b>Vibration resistance</b>	DIN rail mounting	all three axes 5...11.9 Hz, continuous 3.5 mm 11.9...150 Hz, continuous 1 g
	With SD Memory Card inserted	15...150 Hz, continuous 1 g
<b>Shock resistance</b>	DIN rail mounting	IEC 60068-2-27: all 3 axes 15 g, 11 ms, half-sinusoidal

#### EMC immunity tests

<b>Electrostatic discharge (ESD)</b>	Electrostatic voltage in case of air discharge	8 kV
	Electrostatic voltage in case of contact discharge	6 kV
<b>Fast transient interference voltages (burst)</b>	Supply voltage units (AC, DC)	2 kV
	Digital inputs/outputs (24 V DC)	2 kV
	Digital inputs/outputs (120/230 V AC)	2 kV
	Analog inputs/outputs	1 kV
	CS31 system bus	2 kV
	Serial RS-485 interfaces (COM)	2 kV
	Ethernet	1 kV
<b>High energy transient interference voltages (surge)</b>	I/O supply, DC-out	1 kV
	Power supply AC	2 kV CM (1) / 1 kV DM (2)
	Power supply DC	1 kV CM (1) / 0.5 kV DM (2)
	DC I/O supply, add. DC-supply-out	0.5 kV CM (1) / 0.5 kV DM (2)
	Buses, shielded	1 kV CM (1)
<b>Influence of radiated disturbances</b>	AC-I/O unshielded	2 kV CM (1) / 1 kV DM (2)
	I/O analog, I/O DC unshielded	1 kV CM (1) / 0.5 kV DM (2)
<b>Influence of line-conducted interferences</b>	Test field strength	10 V/m
	Test voltage	3V zone B, 10 V is also met.

(1) CM = Common Mode.

(2) DM = Differential Mode.



