Analog output module

8 analog outputs (4 – 20 mA)

▶ *16-bit analog converter*
▶ *Each channel is optically isolated*

General specifications

Outputs per module	8
Output type	Current, 4 – 20 mA
Analog ground type	Isolated from CPU electronics
Connection	Removable terminal block
Connection type	Tension clamp
Terminal block part number	069-621010
Terminal wire size (UL 1059)	18 - 22 AWG
Test point	All connections
Module size	1 rack slot (0.75"/19 mm)
Bus power required (5 VDC)	0.26 mA
Isolation rating	500 VDC
Operating temperature	
Horizontal installation	0 - 50°C
Vertical installation	0 - 45°C
Storage temperature	-25 – 85°C
Humidity	5 – 95% non-condensing

Actual size

Minimum hardware revision	0, A
Minimum firmware revision	1.02
Minimum operating system revision	5.00.90
Documentation number: 950-533401-004	

Analog output module
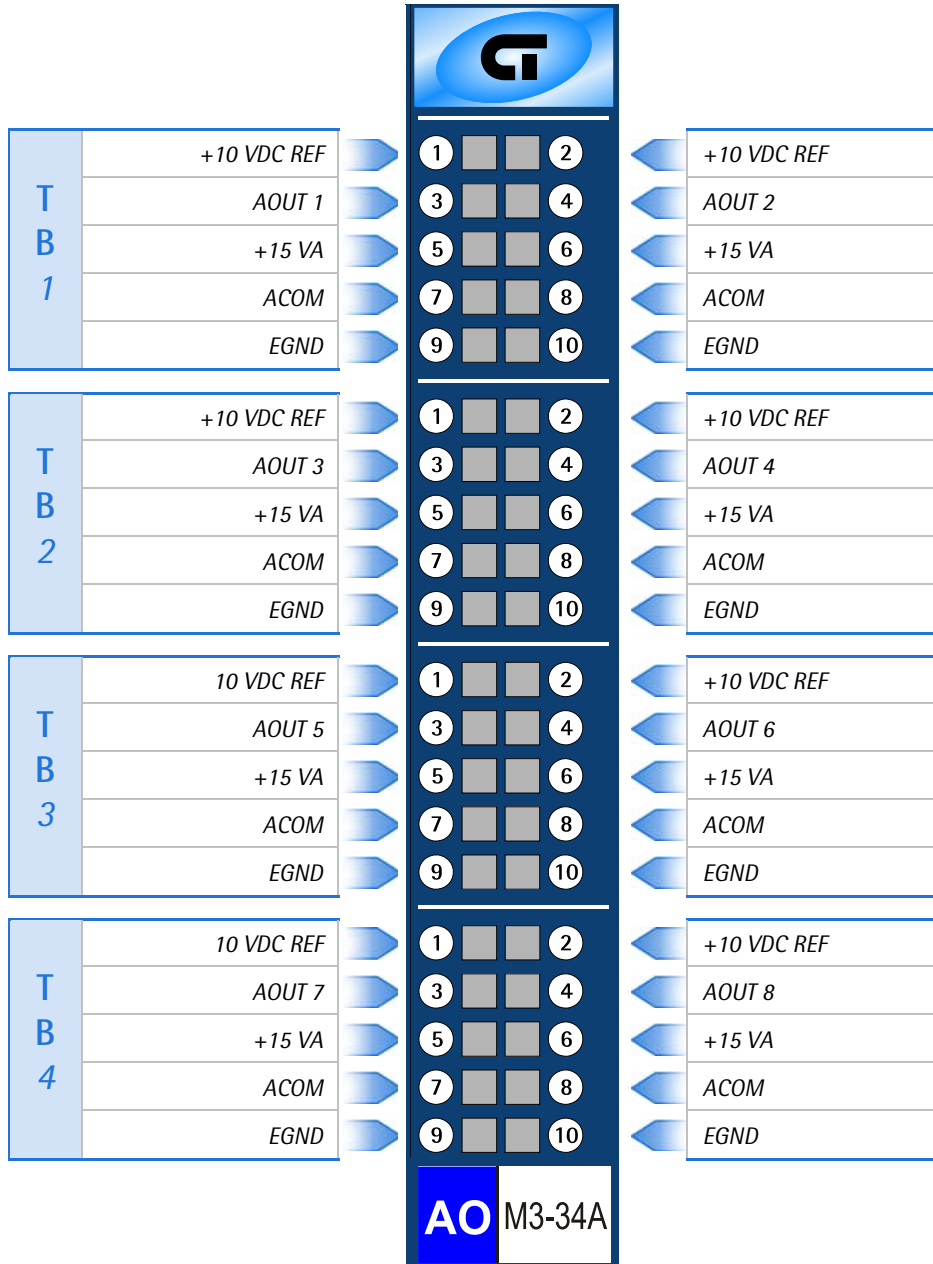
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Performance specifications

Parameter	Value
Output range	4 – 20 mA
Output resolution	16-bit
Full range calibration error[1, 2]	0.025% of range
Offset calibration error at 0 V[1, 2]	0.025% of range
Linearity error (full range)[1, 2]	0.073% of range
Output slew rate	10 V/μsec
Max output current	20 mA/channel
Update rate (all channels)	1250 Hz

1. *Errors are at 25℃.*
2. *Errors are double across full ambient temperature range of 0 – 50℃.*

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Terminal block connections

TB 1			
+10 VDC REF	① ②	+10 VDC REF	
AOUT 1	③ ④	AOUT 2	
+15 VA	⑤ ⑥	+15 VA	
ACOM	⑦ ⑧	ACOM	
EGND	⑨ ⑩	EGND	

TB 2			
+10 VDC REF	① ②	+10 VDC REF	
AOUT 3	③ ④	AOUT 4	
+15 VA	⑤ ⑥	+15 VA	
ACOM	⑦ ⑧	ACOM	
EGND	⑨ ⑩	EGND	

TB 3			
10 VDC REF	① ②	+10 VDC REF	
AOUT 5	③ ④	AOUT 6	
+15 VA	⑤ ⑥	+15 VA	
ACOM	⑦ ⑧	ACOM	
EGND	⑨ ⑩	EGND	

TB 4			
10 VDC REF	① ②	+10 VDC REF	
AOUT 7	③ ④	AOUT 8	
+15 VA	⑤ ⑥	+15 VA	
ACOM	⑦ ⑧	ACOM	
EGND	⑨ ⑩	EGND	

AO M3-34A

Notes

1. *Max total current for all 10 VDC REF and +15 VA connections is 25 mA per module.*
2. *All analog outputs are 4 – 20 mA.*

Analog output module

Application Information
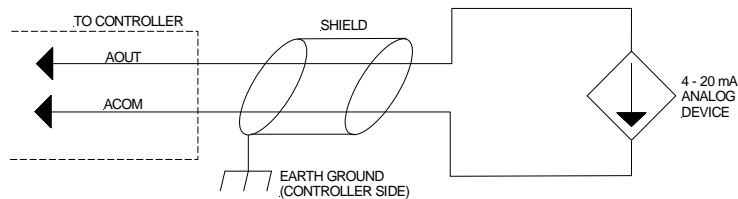
Notes

1. *Shield grounds must be terminated on the controller side of the cable.*
2. *When an analog device is powered via an external power source, it may be necessary to tie the ground of this power source to the module's analog common (ACOM) to limit common mode voltages.*
3. *Insertion and/or removal of I/O modules should be done with all power removed. Failure to do so may lead to damaged electronics and/or incorrect I/O states.*
4. *Incorrect I/O connections may lead to damaged electronics and/or incorrect I/O states.*
5. *For register and programming information, refer to the appropriate controller Applications Guide.*
6. *The information and illustrations contained herein are the property of Control Technology Corporation and are subject to change without notice. Data based on VS = 24 VDC @ 25°C unless otherwise noted. For additional information and/or updates, visit www.ctc-control.com. Copyright © 2007-2013 Control Technology Corporation. All Rights Reserved.*
7. *VS refers to the voltage supply of the controller.*