

ABB AO820-3BSE008546R1

4-channel bipolar analog output module

S800 I/O / isolated analog commands

Per-channel software configuration selects current or voltage output. Separate terminal sets carry the two signal types; wiring must follow the selected mode.

PARAMETER	SPECIFICATION
Manufacturer / article	ABB / 3BSE008546R1
System / function	S800 I/O / analog output
Channels / isolation	4 / channel-to-channel and channel-to-common
HART / redundancy	Not supported / not supported
High integrity / intrinsic safety	Not supported / not supported

Six selectable output ranges

CONFIGURATION	OUTPUT RANGE
Current / bipolar	-20 to +20 mA
Current / unipolar	0 to 20 mA
Current / live zero	4 to 20 mA
Voltage / bipolar	-10 to +10 V
Voltage / unipolar	0 to 10 V
Voltage / live zero	2 to 10 V

Use the exact signal configuration and terminal hardware for the installed loop. These six ranges describe selectable modes, not simultaneous separate outputs on one channel.

Electrical performance

Output characteristics and ModuleBus power budget

PARAMETER	SPECIFICATION
Resolution	12 bits including sign
Under / over range	+/-15%
Current-output load	Maximum 550 ohms
Voltage-output load	Minimum 5 kilohms
Voltage error	Maximum 0.1%
Current error	Typical 0.1% at 250 ohms; maximum 0.15%
Temperature drift	Maximum 90 ppm/degree C
Rise time	Less than 0.7 ms
Update cycle	Maximum 1.5 ms
Current limiting	Short-circuit-proof, current-limited output
Maximum field cable	600 m
Rated insulation	50 V
Dielectric test	500 V AC
Power dissipation	Typical 6 W
+5 V ModuleBus consumption	Maximum 100 mA
+24 V ModuleBus consumption	Maximum 260 mA

Diagnostics have separate meanings

Output readback checks converter communication. Open-circuit supervision and process-voltage supervision provide separate fault information; neither replaces a measurement of the field output.

Installation envelope

Environment, physical interface and termination-unit selection

PARAMETER	SPECIFICATION
Operating temperature	0 to +55 degrees C
Approval temperature range	+5 to +55 degrees C
Vertical compact-MTU ambient	Maximum 40 degrees C
Storage temperature	-40 to +70 degrees C
Relative humidity	5 to 95%; non-condensing
Ingress protection	IP20
Pollution degree	Degree 2
Corrosion protection	ISA-S71.04 G3
Equipment class	Class I; earth protected
Keying code	BC
Dimensions W x D x H	45 x 102 x 119 mm; depth 111 mm including connector
Module weight	0.18 kg

Listed termination units

ABB lists TU810V1, TU812V1, TU814V1, TU830V1 and TU833 for AO820. Confirm the selected MTU and keying code BC against the installation configuration.

Temperature distinction

Do not replace the vertical compact-MTU limit with the general 55-degree-C maximum. The approval range also differs from the stated 0-to-55-degree-C operating range.

Engineering questions

Eight decisions specific to ABB AO820-3BSE008546R1

01 Can ABB AO820-3BSE008546R1 change from current to voltage output without checking its wiring?

No. Channel mode is configured in software, but current and voltage outputs use separate terminal sets. Match the field wiring to the selected output mode.

02 What load check is required when connecting a field device to ABB AO820-3BSE008546R1?

For current output, the load must not exceed 550 ohms. For voltage output, it must be at least 5 kilohms. Apply the limit for the configured mode.

03 Why might ABB AO820-3BSE008546R1 not indicate an open current loop near zero output?

ABB specifies open-circuit channel supervision for current greater than 1 mA. Use that threshold when interpreting the diagnostic state during loop checks.

04 How does ABB AO820-3BSE008546R1 report loss of the supervised process voltage?

The process-voltage supervision input produces channel-error signals when the voltage disappears. These errors can be read through ModuleBus.

05 What must be configured for the fault output of ABB AO820-3BSE008546R1?

OSP sets the output to a predetermined state when an error is detected. Confirm the configured OSP value for each channel before releasing the process loop.

06 Which terminal-unit choices are listed for ABB AO820-3BSE008546R1?

ABB lists TU810V1, TU812V1, TU814V1, TU830V1 and TU833. The published mechanical keying code is BC; select the MTU and wiring arrangement for the installation.

07 Does a vertical compact-MTU installation change the ambient limit for ABB AO820-3BSE008546R1?

Yes. The general maximum ambient is 55 degrees C, but vertical mounting in a compact MTU is limited to 40 degrees C. The published operating range is 0 to 55 degrees C; approvals cover 5 to 55 degrees C.

08 Can ABB AO820-3BSE008546R1 be selected where HART or redundant analog outputs are required?

No. ABB marks both HART and redundancy as unsupported for this module. Check the system requirement before selecting it for those duties.

Related S800 catalogue

Navigation aids; not an interchangeability or approved-substitution list

BRAND + MODEL	RELATION	PRODUCT LINK
ABB TU833 3BSE038726R1	Listed AO820 MTU	View ABB TU833 3BSE038726R1 page
ABB TU810V1 3BSE013230R1	Listed AO820 MTU	View ABB TU810V1 3BSE013230R1 page
ABB TU830V1	Listed AO820 MTU	View ABB TU830V1 page
ABB AO895 3BSC690087R1	S800 output family	View ABB AO895 3BSC690087R1 page
ABB AO810 3BSE008522R1	S800 output family	View ABB AO810 3BSE008522R1 page
ABB AO810V2 3BSE038415R1	S800 output family	View ABB AO810V2 3BSE038415R1 page
ABB AO801 3BSE020514R1	S800 output family	View ABB AO801 3BSE020514R1 page
ABB TU835V1 3BSE013236R1	S800 MTU family	View ABB TU835V1 3BSE013236R1 page

Only the three Listed AO820 MTU rows identify compatible terminal units. Other rows are related family products, not asserted replacements.

PARAMETER	SPECIFICATION
Country of origin	Sweden
HS / tariff code	8537101190
Shipping origin	Xiamen, Fujian, China
Inventory / dispatch	1 / 3 days; fast shipment

APTER POWER CONTACT

WHATSAPP / PHONE

+86 180 3023 5313

EMAIL sales13@apterpower.com

WEBSITE www.apterpower.com



ABB AO820
3BSE008546R1

Technical source: ABB Compact Product Suite hardware selector - AO820; article 3BSE008546R1; General info, Detailed data, Diagnostics, Environment and certification, Compatibility, Dimensions. Commercial fields supplied by Apter Power.