

RRIA-01

Resolver Interface Module

accurate motor-shaft speed and angular-position feedback

PRODUCT SNAPSHOT

BRAND

ABB

FAMILY

ABB ACS800 drive

PART

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PRODUCT OVERVIEW

accurate motor-shaft speed and angular-position feedback

1

Interfaces an analog resolver to ACS800 control

2

Returns motor-shaft speed and angle feedback

3

Supports 10 kHz or 20 kHz resolver excitation

4

Provides channel, initialization and error diagnostics

SYSTEM COMPONENTS

ACS800 RMIO option slot

AIMA-01 I/O Module Adapter

Shielded resolver cable

Compatible analog resolver

TECHNICAL NOTE

Install RRIA-01 only in the documented ACS800 option slot or AIMA-01 adapter position, with resolver pole pairs and excitation frequency preserved. Verify positive feedback direction and review CHA, CHB, WD/INIT and ERR indications during controlled startup.

TECHNICAL DATA

PARAMETER	VALUE
Complete model	RRIA-01
Resolver connection	Analog resolver
Drive option slots	SLOT 1 or SLOT 2
External adapter	AIMA-01
Parallel-bus connector	38-pin
Resolver terminal block	8-pole screw type
Terminal wire size, max.	2.5 mm ²
Resolver cable construction	4 x (2+1) twisted pairs; individual and overall shields
Resolver conductor area	0.5 to 1.0 mm ²
Resolver cable length, max.	100 m
Excitation frequency	10 kHz or 20 kHz

PARAMETER	VALUE
Excitation output, max.	12 V _{pp}
Resolver input level	8 V _{pp}
Position feedback resolution	12 bits (0.024%)
Node ID range	16 to 31
Default node ID	16
Pole-pair setting	1, 2, 3 or 4
Degree of protection	IP20
Power consumption	180 mA at 5 V + 80 mA at 24 V
Isolation test voltage	1.5 kV AC for 1 min
Estimated minimum lifetime	100000 h
Diagnostic LEDs	CHA/CHB green; WD/INIT yellow; ERR red

RELATED PRODUCTS ON APTER POWER

MODEL	SYSTEM ROLE	APTER POWER PAGE
DSDX454	ABB digital I/O board	View DSDX454 page
DSDO110	ABB digital output board	View DSDO110 page
DSDI110A	ABB digital input board	View DSDI110A page
DSBC174	ABB bus coupler	View DSBC174 page
DSAI145	ABB analog input board	View DSAI145 page
DSAI130	ABB analog input board	View DSAI130 page
DSAI110	ABB analog input board	View DSAI110 page
DO630	ABB digital output module	View DO630 page

APPLICATIONS & PRECAUTIONS

COMMON APPLICATIONS

ACS800 resolver-feedback commissioning

Interfaces an analog resolver to ACS800 control

Permanent-magnet motor shaft-position feedback

Returns motor-shaft speed and angle feedback

AIMA-01 remote option-module installation

Supports 10 kHz or 20 kHz resolver excitation

Drive speed-feedback fault tracing

Provides channel, initialization and error diagnostics

PRODUCT PRECAUTIONS

- 1 Wait at least five minutes after isolating the ACS800 mains before handling RRIA-01.
- 2 Confirm RRIA-01 is assigned to SLOT 1, SLOT 2 or the documented AIMA-01 node.
- 3 Set resolver pole pairs and excitation frequency before refitting the enclosure cover.
- 4 Earth resolver cable shields according to resolver isolation and motor grounding arrangement.
- 5 Do not route resolver cable parallel to motor or other power cables.
- 6 Confirm the 38-pin connector is fully inserted and both mounting screws are secured.
- 7 Verify forward rotation produces positive resolver speed feedback before closed-loop release.
- 8 Review CHA, CHB, WD/INIT and ERR indications during controlled startup.

ENGINEER FAQ

Q1 Does RRIA-01 match ACS800 RMIO option slot in a ACS800 resolver-feedback commissioning installation?

Verify the complete RRIA-01 marking, the documented ABB ACS800 drive position and the installed ACS800 RMIO option slot before fitting the assembly.

Q3 Which ABB ACS800 drive records should be captured before removing RRIA-01?

Record the as-found wiring, installed position, active configuration and diagnostic state associated with RRIA-01 before disconnection.

Q5 Which AIMA-01 I/O Module Adapter condition should be checked when RRIA-01 reports an abnormal state?

Check the AIMA-01 I/O Module Adapter supply, seating and connection first, then compare channel diagnostics with the recorded RRIA-01 baseline.

Q7 What maintenance evidence is required after RRIA-01 is used for AIMA-01 remote option-module installation?

Retain the nameplate record, corrective action, final diagnostics and a controlled aim-a-01 remote option-module installation functional-test result for RRIA-01.

Q2 How should RRIA-01 be wired when it must interfaces an analog resolver to acs800 control?

Isolate the circuit, identify every terminal and reproduce the approved polarity, shield and channel assignment for RRIA-01; then continuity-test the affected path.

Q4 What controlled test confirms that RRIA-01 can returns motor-shaft speed and angle feedback?

Apply the approved field or simulated stimulus, observe the ABB ACS800 drive indication and confirm the intended response without bypassing the normal interlocks.

Q6 Can RRIA-01 be moved directly into Permanent-magnet motor shaft-position feedback without validating Compatible analog resolver?

No. Confirm the Compatible analog resolver, revision, connection scheme and ABB ACS800 drive configuration before transferring RRIA-01 to that duty.

Q8 How should RRIA-01 be returned to service in Drive speed-feedback fault tracing?

Restore power under control, verify supports 10 khz or 20 khz resolver excitation, exercise the intended signal path and release RRIA-01 only after the ABB ACS800 drive remains in its approved operating state.

SOURCE ABB RRIA-01 Resolver Interface Module User's Manual | 3AFE68570760 Rev B

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