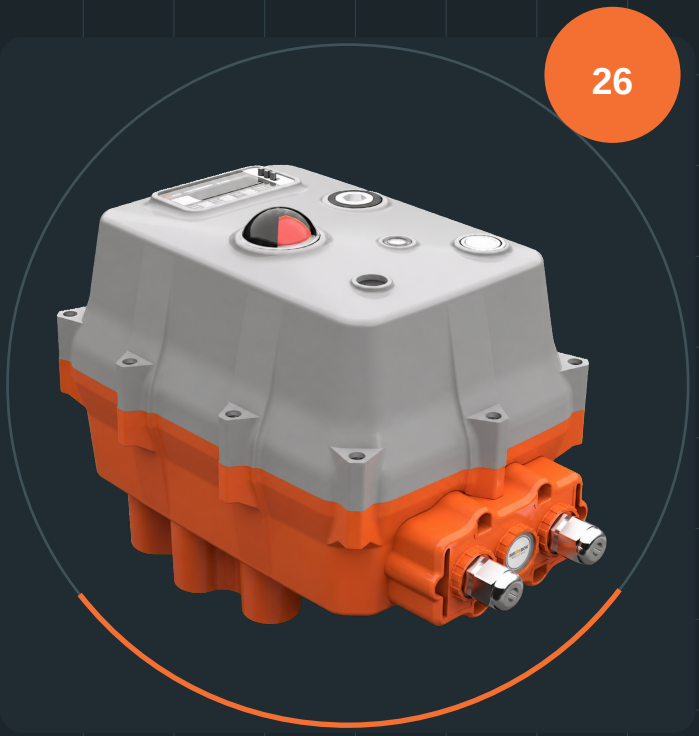
24 V DC | Modulating Failsafe

S1000

SERIES 26 TYPE

Modulating Failsafe actuator

Installation, wiring, commissioning and operating reference for the AVA 24 V DC intelligent quarter-turn actuator.



DOCUMENT CONTROL

DOCUMENT	ISSUE	PART REFERENCE	OWNER
AVA-S1000-26-MF-UM-01	01	S1000 SERIES 26 TYPE Modulating Failsafe	TECHNICAL TEAM

IMPORTANT

Training and installation reference. Isolate all power before wiring or manual operation.

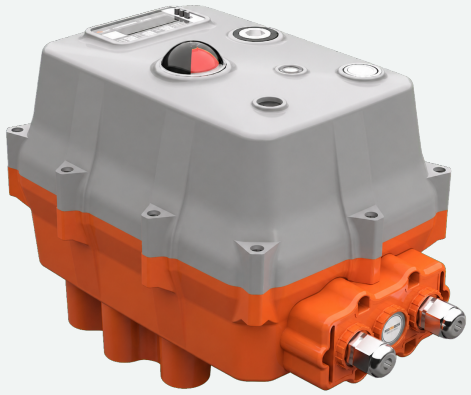
Verify the exact product label, approved wiring diagram and application requirements before work begins.

PRODUCT OVERVIEW

Precise control with a defined Failsafe response

The S1000 Series 26 Type combines a 24 V DC brushless drive, non-contact position control, local OLED interface and ordered Failsafe functionality for Modulating quarter-turn valve applications.

1000 Nm	RATED OUTPUT TORQUE
Approx. 45 s	NOMINAL RUNNING TIME
24 V DC	RATED SUPPLY



Core functionality

Configurable control

Selectable 0-5 V, 1-5 V, 0-10 V, 2-10 V, 0-20 mA and 4-20 mA command formats.

Position feedback

Matching voltage or current feedback formats support remote position indication.

Local OLED interface

A 1.3 inch display shows valve angle, operating state and the active command; sleep mode follows inactivity.

Non-contact positioning

Electronic position measurement avoids routine mechanical contact wear in the position control system.

Local and remote control

Commissioning functions support local movement, remote commands and direction checks.

Defined Failsafe function

Commissioning includes a controlled power-loss test against the ordered safe position and site cause-and-effect documentation.

Adjustable behaviour

Direction, speed, closed-position deviation and control/feedback formats can be configured.

Alarm output

Optional relay contact feedback can be allocated as an external fault alarm.

TECHNICAL DATA

S1000 Series 26 Type specification

Values below reflect the supplied product information. Verify the actuator rating label and controlled order documentation before application-critical use.

GROUP	PARAMETER	VALUE	NOTE
Electrical	Rated supply	**24 V DC**	
	Supply range	**22-30 V DC**	
	Power consumption	**180 W max / 30 W running / 5 W holding**	
	Peak current	**7.5 A for 5 ms at 24 V DC**	
	Recommended fuse	**10 A**	Confirm final protection design
	Terminal capacity	**0.5-1.5 mm2**	10-way 5.08 mm terminal
Performance	Rated torque	**1000 Nm**	S1000 Series 26 Type
	Nominal travel	**90 +/- 2 deg**	Maximum adjustable angle 330 +/- 5 deg
	Running time	**Approx. 45 seconds**	Load and settings dependent
	Duty rating	**S3-75% AC / S3-85% DC**	At load <=85% rated torque
	Sound pressure level	**65 dB(A)**	
	Manual operation	**Matching hex key**	Use only with power isolated
Environment	Ingress protection	**IP67 to EN 60529**	All directions when correctly installed
	Ambient temperature	**-15 to +60 deg C**	Aluminium enclosure
	Humidity	**5-95% RH**	Non-condensing
	Shock / vibration	**<=2 g / 10-55 Hz**	1.5 mm double amplitude
	Medium temperature	**<=80 deg C direct mount**	Use bracket or heat stand above 80 deg C
Construction	Enclosure	**Cast aluminium**	Flame retardance HB / UL94 method
	Insulation resistance	**100 ohm at 500 V DC**	
	Withstand voltage	**500 V AC for 1 minute**	
	Mounting interface	**ISO 5211 F12 / F14 / F16**	Female octagonal output
	Output depth	**Up to 40 mm**	46 x 46 mm female octagonal
	Approximate weight	**25 kg**	Casting aluminium configuration
Compliance	Certification marking	**CE**	Confirm current declaration for supplied unit

POWER SUPPLY SIZING · NOMINAL 24 V DC

I (A) = P (W) ÷ V (V)
P (W) = V (V) × I (A)

30 W ÷ 24 V = **1.25 A running**
180 W ÷ 24 V = **7.5 A maximum**

Minimum theoretical output: **24 V DC, 7.5 A / 180 W**. If a 25% project margin is required: 7.5 A × 1.25 = **9.4 A**; select the next suitable standard PSU, commonly **10 A / 240 W**.

DESIGN CHECK

Verify the stated 7.5 A for 5 ms peak, cable voltage drop and the combined demand where one supply serves multiple actuators. Do not size from the 30 W running value alone.

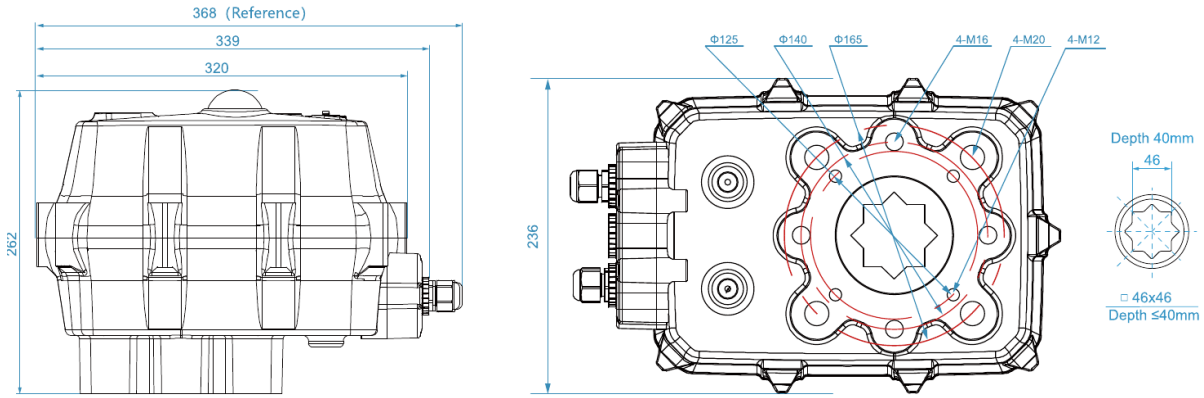
ENDURANCE REFERENCE

A 20,000-cycle endurance reference was stated under controlled test conditions. Actual service life depends on load, cycling pattern, valve condition, environment and installation quality.

DIMENSIONS AND CONSTRUCTION

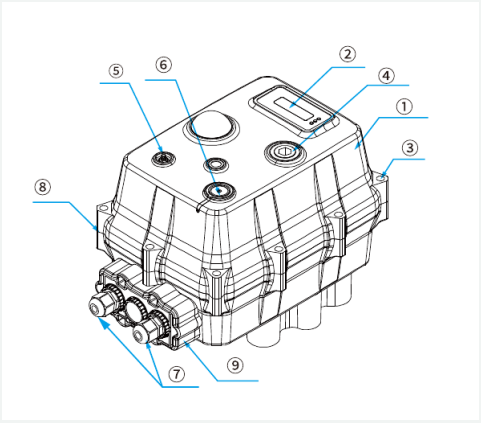
Mechanical interface and principal parts

All dimensions are in millimetres. Use the product drawing and the actual supplied actuator when designing brackets, couplings or mounting plates.



368 mm	236 mm	262 mm
REFERENCE LENGTH	BODY WIDTH	BODY HEIGHT

Main parts



REF	COMPONENT	MATERIAL
01	**Actuator housing**	Cast aluminium
02	**Position indicator**	Polycarbonate (PC)
03	**Fasteners (x4)**	304 stainless steel
04	**Manual shaft**	304 stainless steel
05	**LED lens**	Transparent polycarbonate
06	**Clutch**	Polyoxymethylene (POM)
07	**Waterproof cable connector**	Nylon
08	**Upper / lower cover seal**	Silica gel
09	**Terminal cover**	Cast aluminium

Reference numbers correspond to the callouts in the actuator illustration.

MECHANICAL DESIGN CHECK

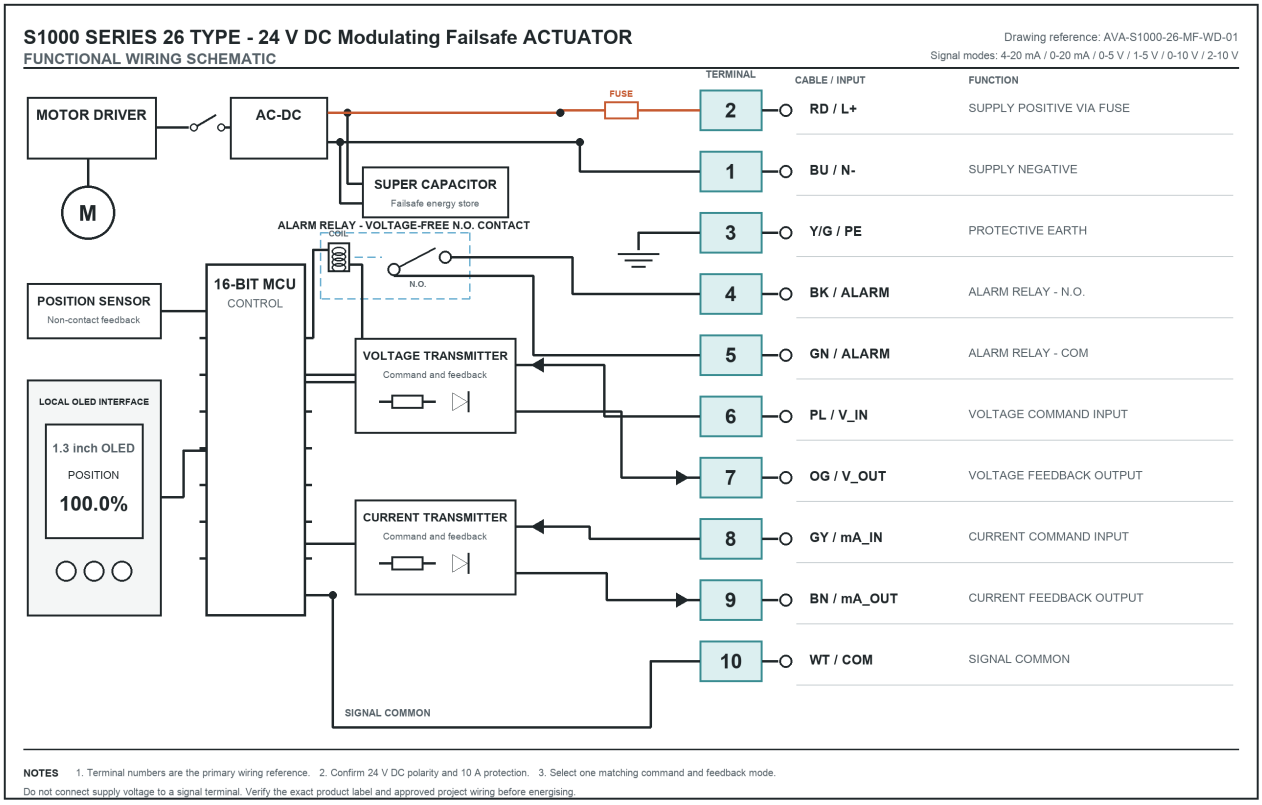
Confirm mounting pattern, output drive, insertion depth and available manual-operation and wiring clearance before manufacture or installation of any adaptor components.

ELECTRICAL CONNECTIONS

Power, command, feedback and alarm terminals

ISOLATE BEFORE WIRING

Disconnect and secure the supply before opening the terminal compartment. Confirm 24 V DC polarity and protective earth requirements from the exact product label and approved wiring diagram.



TERMINAL	1	2	3	4	5	6	7	8	9	10
FUNCTION	SUPPLY NEG	SUPPLY POS	EARTH	ALARM N.O.	ALARM COM	VOLTAGE COMMAND	VOLTAGE FEEDBACK	CURRENT COMMAND	CURRENT FEEDBACK	SIGNAL COMMON
INPUT	BU / N-	RD / L+	Y/G / PE	BK	GN	PL / V_IN	OG / V_OUT	GY / mA_IN	BN / mA_OUT	WT / COM

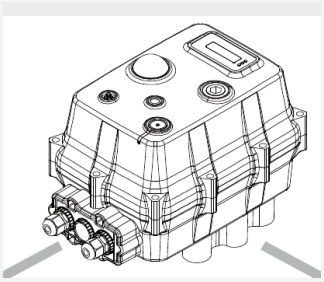
Terminal and cable identification

S1000 Series 26 Type - 24 V DC terminal block
Terminals 1-3: supply and protective earth. Terminals 4-10: alarm, command, feedback and signal common.
Important: Use terminal numbers as the primary reference and never connect supply voltage to a signal terminal.

MOUNTING

Mechanical installation and valve sizing

Mount the actuator without forcing the output drive. Brackets and couplings must preserve alignment, stiffness and concentricity throughout travel.

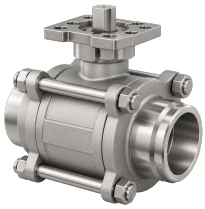


ALIGN THE DRIVE

Confirm the valve shaft, adaptor and actuator output share a common centreline. The assembly must seat without leverage or forcing. Preserve access to the terminal compartment, indicator and manual drive.

01 Bracket-mounted valve

Use a rigid bracket and concentric coupling where direct mounting is not available.



02 Direct-mount two-way

Confirm shaft engagement depth, pattern and clearance before tightening.

03 Direct-mount three-way

Check valve porting, travel direction and the required safe position.

VALVE TYPE	MINIMUM ACTUATOR TORQUE RESERVE
Wafer butterfly valve	Rated actuator torque >= 2.0 x maximum valve torque
Flanged butterfly valve	Rated actuator torque >= 1.7 x maximum valve torque
Metal ball valve	Rated actuator torque >= 1.7 x maximum valve torque
Plastic ball valve	Rated actuator torque >= 1.5 x maximum valve torque

- Use spring and flat washers where specified and tighten the fasteners evenly.
- Bracket twist during travel should remain <=0.2 mm; bracket parallelism should remain <=0.5 mm.
- Machine coupling bores concentrically and limit mechanical hysteresis to <=10 deg.
- Keep the mechanical indicator facing upward and reserve access for wiring and manual operation.
- Protect the housing from incompatible solvents and use only material-compatible neutral-cure sealants where sealing is specified.
- After installation, cycle the valve manually with power isolated before commissioning electrically.

COMMISSIONING

Commission the Modulating and Failsafe functions

BEFORE MOVEMENT

Confirm the valve can move freely, all guards and fasteners are secure, the correct 24 V DC supply is available, and personnel are clear of the valve and linkage.

01 Verify configuration

Check the S1000 Series 26 Type identity, supply rating, valve torque requirement, output drive and mounting orientation.

02 Confirm wiring

Check polarity, fuse, earth, command input, position feedback and optional alarm contacts terminal by terminal.

03 Establish end positions

Use local controls to save the fully open and fully closed positions. Verify the mechanical stops are not carrying normal drive load.

04 Set signal formats

Select the required input and feedback format: voltage or current. Confirm the field controller uses the same ranges.

05 Check direction and speed

Run through full travel locally, confirm opening/closing direction and adjust operating speed only within the approved range.

06 Prove remote control

Apply minimum, mid-range and maximum commands. Compare displayed position, actual valve travel and feedback output.

07 Validate Failsafe response

Confirm the required safe position from the order record. Under controlled conditions, interrupt normal power and verify travel, indication and alarms against the approved cause-and-effect.

08 Record and release

Record settings, wiring reference and functional checks. Refit covers and seals before returning the assembly to service.

LOCAL OLED INTERFACE

Firmware user guide available on request

The detailed firmware user guide is available on request from AVA Technical Support. Confirm that the guide revision matches the firmware and ordered functionality of the supplied actuator before changing menu settings.

FAULT FINDING AND SAFETY

Respond methodically and keep the installation safe

SYMPTOM	LIKELY CAUSES	CHECKS AND ACTION
No movement	No supply; incorrect voltage; overload trip; loose terminal; drive start fault	Isolate, check supply and fuse, confirm valve moves freely, inspect terminals and review the displayed fault. Refer unresolved drive faults to AVA Technical Support.
No feedback	Feedback wiring open; output disabled; incorrect signal mode	Check terminals 7 or 9 and common, confirm selected feedback mode, then verify the signal at the actuator before checking field wiring.
Does not fully close	Incorrect end position; feedback control tolerance; mechanical wear or lost motion	Check mechanical travel and coupling, then re-establish the closed position using the approved commissioning procedure.
Water ingress	Incorrect cable outside diameter; gland or seal incomplete; housing damage; loose covers	Isolate immediately. Do not re-energise a wet unit. Correct the ingress path and refer the actuator for assessment.

Safety essentials

- Read this guide and the controlled order documents before installation or operation.
- Isolate and secure power before opening covers, wiring, dismantling, manual operation or valve work.
- Never wire or dismantle the unit while energised.
- Do not use this standard product in a flammable or explosive atmosphere.
- Protect the actuator from direct rain, prolonged sunlight and water splash where the final installation requires additional shielding.
- Maintain specified glands, covers, seals and cable outside diameters to preserve ingress protection.
- Do not stand on, drop or strike the actuator. Reserve safe access for installation and maintenance.
- Use a bracket or thermal stand when process temperature at the mounting interface exceeds 80 deg C.
- Stop and contact AVA Technical Support if the correct wiring, signal selection, torque requirement or fault response is unclear.

FINAL VERIFICATION

Before handover, confirm covers are secured, glands are sealed, the valve travels correctly from local and remote commands, feedback agrees with actual position, and the final settings are recorded.

PART REFERENCE	DOCUMENT	SUPPORT
S1000 SERIES 26 TYPE Modulating Failsafe	**AVA-S1000-26-MF-UM-01**	**AVA Technical Support**