
AEL8 Series Safety Information

Quick Start Guide

Caution

Before commencement of any work to make the electrical connections refer to IM-P714-02 for the AEL8 Section 1 "Safety Information".

IM-P714-02 can be found on the Spirax Sarco website.

Warning

Mains connection and commissioning of the AEL8 Series actuator requires specialist knowledge of electrical circuits and systems, and the inherent dangers. A working knowledge of linear actuators is also required. The operator is responsible for ensuring that safe systems of operation and practice are implemented and maintained.

Only qualified personnel must be allowed to make the electrical power connections to the AEL8 Series actuator, and these personnel must be familiar with, and comply with the applicable health and safety standards or guidelines.

Failure to do so could result in death, severe physical injuries or material damages to the actuator, valve and associated equipment.

- Ensure that the electrical power supply is isolated.
- Safeguard against the unintentional switching on by ensuring that there is a safe system of practice in operation – e.g. lock off the electrical supply isolator.
- Ensure that any installation of any new power supply is compliant with local regulations
- Check the mains connection voltage and frequency for conformity to the actuator. Details of the requirements are identified on the AEL8 Series actuator nameplate which can be found on the actuator baseplate.
- Ensure that the power supply cable is of the correct cross section for the maximum expected load. Details of the requirements are identified on the AEL8 Series actuator nameplate which can be found on the actuator baseplate, and in the Technical Information Sheet (TI-P714-01).
- Minimum cross section for the power supply cable is 1 mm². Conductors below this area can result in operational disturbances.
- Ensure that the power supply is correctly fused for the maximum expected load. Details of the requirements for each AEL8 Series actuator can be found in TI-P714-01.

Information

Terminal diagram can be found inside the cover of the actuator

Push button assignment

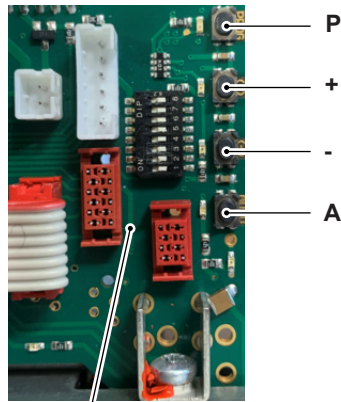
P	Programming button/Save button
+	Movement retracting (to open valve)
-	Movement extracting (to close valve)
A	Switchover MANUAL/AUTO

LED assignment

L_P	Orange
L_+	Red
L_-	Green
L_A	Blue
L_Power	Green LED showing PCB is powered



DIP switch
row S1



DIP switch
row S2

(DIP Switches shown as sent from factory, Please refer to section 6 of IM-P714-02 for commissioning)

Starting auto tune function

For the majority of applications a quick set-up routine can be adopted. With the actuator spindle in the fully extended position, the power supply safely isolated and the actuator cover removed:

- With reference to Tables on page 30 in IM-P714-02 (DIP Switch Configuration)
- Select the action required with S1.2 (default is actuator stem extended at minimum input signal)
- Ensure S1.1 is "Off"
- Select the control signal required with S1.5 (default is 4-20 mA/2-10V)

Note: the feedback signal from the positioner automatically updates to the chosen input signal

- Select the desired failure mode(s) in the event of control signal and power supply interruption. For Steam systems, it is recommended that DIP Switches S1.7, S1.8, S2.5 and S2.6 be set to "OFF" (Tables on page 3 of this document or see page 36 of IM-P714-02)
- Manually move the valve off its seat approximately 20-50%

	Switch number	Function	OFF	ON
DIP Switch SW.1 Configuration	S1.1	Not in use		
	S1.2	Reversing signal	0% CLOSE	0% OPEN
	S1.3	0% position	4-20 mA/2-10V	0-20 mA/0-10V
	S1.4	Reduced force	Off	Set
	S1.5	End position configuration (seating)	See table below	
	S1.6			
	S1.7	Position in case of input signal interruption	See table below	
	S1.8			
DIP Switch SW.2 Configuration	S2.1	Calibration of travel	Off*	Set
	S2.2	Not in use		
	S2.3	Not in use		
	S2.4	Actuator run in remote mode	Off*	Set
	S2.5	Position in case of input signal interruption	See table below	
	S2.6			
	S2.7	Use preset stroke for autotune function	Off*	Set
	S2.8	Autotune function	Off*	Set

End position configuration (seating)	S1.5	S1.6
Limit/Limit	Off	Off
Thrust/Limit	On	Off
Limit/Thrust	Off	On
Thrust/Thrust	On	On
Position in case of input signal interruption	S1.7	S1.8
0% position	Off	Off
Close	On	Off
Open	Off	On
Stay in place	On	On
Position in case of power supply interruption	S2.5	S2.6
Set point	Off*	Off*
Close	On	Off
Open	Off	On
Stay in place	On	On

*Default position



Warning

The AUTOTUNE function will cause the valve and actuator to move. Make certain that all outcomes have been properly accounted for. The AUTOTUNE function can be stopped by pressing and holding any button during the commissioning cycle.

Warning

Prior to commissioning actuators fitted with the Shutdown Module, it is important to refer to Section 6.7: Commissioning of Shutdown Module

- Reconnect power supply
- Set S2.8 to "ON" and the PROG LED will flash
- Press and hold PROG button for 3 seconds, AUTOTUNE will commence

Commissioning LED status

LED				Status
BLUE	RED	GREEN	ORANGE	
			Flash	Waiting for AUTOTUNE start
	Flash (alternate)		Flash	AUTOTUNE in progress
		Flash		AUTOTUNE complete
	Quick Flash			AUTOTUNE error

- Once AUTOTUNE is complete the illuminated hand wheel will also confirm actuator status (Green if control signal is connected.)
- Set S2.8 to "OFF"

Illuminated Hand Wheel – Actuator status

Colour of handwheel	Status
GREEN	Ready for operation
BLUE	Manual operation (Handwheel engaged)
ORANGE	Warning (e.g. actuator operating at 50% speed)
RED	Fault

For manual commissioning and DIP switch configuration please refer to IM-P714-02

DECLARATION OF CONFORMITY

Apparatus model/Product: **Electric Linear Actuators:
AEL8 Series**

Name and address of the manufacturer or his authorised representative: **Spirax Sarco Ltd,
Runnings Road
Cheltenham
GL51 9NQ
United Kingdom**

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The object of the declaration described above is in conformity with the relevant statutory requirements of:

SI 2016 No.1101 *	The Electrical Equipment (Safety) Regulations 2016
SI 2016 No.1091 *	The Electromagnetic Compatibility Regulations 2016
SI 2008 No.1597 * (Annex I clauses)	The Supply of Machinery (Safety) Regulations 2008 1.1.2, 1.1.3, 1.1.5, 1.2.1, 1.2.2, 1.2.6, 1.3.1, 1.3.2, 1.3.7, 1.5.1, 1.7.3, 1.7.4

(*As amended by EU Exit Regulations)

References to the relevant designated standards used or references to the other technical specifications in relation to which conformity is declared:

SI 2016 No.1101 *	EN 61010-1:2010+A1:2019 EN IEC 61010-2-202:2021
SI 2016 No.1091 *	EN 61800-3:2004+A1:2012
SI 2008 No.1597 *	EN ISO 12100:2010

Additional information:

Signed for and on behalf of: **Spirax Sarco Ltd,**

(signature): 

(name, function): **N Morris
Compliance Manager
Steam Business Development Engineering**

(place and date of issue): **Cheltenham**

30 June 2023

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EU DECLARATION OF CONFORMITY

Apparatus model/Product: **Electric Linear Actuators:
AEL8 Series**

Name and address of the
manufacturer or his authorised
representative: **Spirax Sarco Ltd,
Runnings Road
Cheltenham
GL51 9NQ
United Kingdom**

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

2014/35/EU	Low Voltage Directive
2014/30/EU	EMC Directive
2006/42/EC	Machinery Directive
(Annex I clauses)	1.1.2, 1.1.3, 1.1.5, 1.2.1, 1.2.2, 1.2.6, 1.3.1, 1.3.2, 1.3.7, 1.5.1, 1.7.3, 1.7.4

References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared:

(Low Voltage Directive) EN 61010-1:2010+A1:2019
EN IEC 61010-2-202:2021

(EMC Directive) EN 61800-3:2004+A1:2012

(Machinery Directive) EN ISO 12100:2010

Signed for and on behalf of: **Spirax Sarco Ltd,**

(signature): 

(name, function): **N Morris**

(place and date of issue): **Compliance Manager, Steam Business Development Engineering
Cheltenham
2023-06-30**

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