

Electronic three-phase actuator controller, type ESA-01

Engine powered by means of triacs (softstart)

Automatic engine rotation pace decrement by means of backward current

Signals: steering 4...20 mA, binary- 24 V DC/12 mA

Contactless scope and power measurement (hall effect sensor)

Max. power of the controlled engine up to 3 kW



Recommended range of applications

ESA-01 type electronic three -phase actuator controllers may be utilized in order to control such actuators as **ESW-07** (p. XIII.9), **ESO-07** (p. XIII.14), and **ESL-07** (p. XIII.19), which are equipped with three -phase 3x400 V AC engines and are controlled via 4...20 mA signal. The controller, being connected to the actuator, may be utilized in continuous technical processes, as well as industrial automatic systems controlling modules.

Technical specification

External power supply	Main supply: 400 V AC + 10% / - 15 % ; Emergency supply: 24 V DC + 20 % / - 15 % Power consumption: 250 mA (on average)
Nominal power	Provided on the plate adjusted to the engine power
Switchgear	Contactless engine powering and rotation pace decreasing by means of triacs. Power circuit of the actuator connected to the ESA-01 controller should be additionally protected by means of the Legrand C4 safety catch. Performance level of the safety catch should be adjusted to the performance of utilized engine.
Steering signals	<ul style="list-style-type: none"> • Positioner - Power supply control input → $I_{STER} = (4...20) \text{ mA}$, • Steering inputs binary: 6 inputs (2x3); voltage 24V DC inputs → (CONFIRMATION OPEN CLOSE the inputs are insulated by means of the optoelectronic battery; power consumption=10mA
Output signals	<p>Analogue - 2 insulated and galvanized power inputs $I_{WV} (4...20) \text{ mA}$; $R_{LOAD} = 500 \Omega$</p> <ul style="list-style-type: none"> • Actuator position adjustment • Actuator mechanical load adjustment <p>Binary 6 programmable gold-plated relays</p> <ul style="list-style-type: none"> • 5 dry contact relays; NO/NC type relays; 250 V AC; operation type AC1 1A; Signalling by means of powering the ON relay. Signalling: WZ and WO peripheral positions. Two intermediate positions (PO and PZ). Indication of local steering system utilization → <p>LOCALLY</p> <ul style="list-style-type: none"> • 1 alarm dry contact relay; NO/NC type relays; 250 V AC; operation type AC1 1A; In the case of lack of malfunctions, the relay is in the ON position; the OFF position signalizes: no power supply, engine overheating, improper steering signal $I_{STER} \rightarrow (4...20) \text{ mA}$, insufficient scope of operation, actuator's pin off limits, max. positioning time exceeded, ZAM or OTW overload
Additional input voltage	Basic: 24 V DC, max. current efficiency = 100 mA insulated from the electronic modules of the controller by means of galvanized elements. NOTE! In the case of utilization of 400 V AC power source, the additional voltage will not be generated
Local ignition switch	<p>Basic:</p> <ul style="list-style-type: none"> • LOCAL/REMOTE CONTROL switch (with a key involuntary switching prevention) • OPEN STOP CLOSE CONTROL switch

Available functions

Functions accessible during configuration	<ul style="list-style-type: none"> • Programmable phase-switching procedure • Actuator's scope of operation configuration by means of local ignition switch • Position adjustment for the configured actuator's scope of operation • Mechanical load indication may be taken advantage of during configuration of the actuator's scope of operation • In the case of scope limitation by means of mechanical load, the position of the limit switch is adjusted • Programmable actuator stopping method: depending on position of the moved element in relation with WZ and WO peripheral positions or depending on the amount of mechanical load • Programmable reaction of actuator in the case of reception of inappropriate signal: STOP or PERIPHERAL POSITION CLOSED or PERIPHERAL POSITION OPEN • Two freely programmable intermediate position transmitters: programmable range = (0...100%) of actuator's scope of operation • Available position-related options: Normal/ Inverted • 7 levels of display's brightness
Steering-related functions	<ul style="list-style-type: none"> • Engine phases control • Engine temperature control • Signal accurateness control • Minimal scope of operation control • Actuator's pin off set limits control • Control of any excessive mechanical load occurring within the scope of operation of the actuator • Maximal stabilization time of the actuator's pin control
Actuator protection -related functions	<ul style="list-style-type: none"> • Protection against exceeding the S4 1200 cycles/hour working pace • Engine overheating protection • Actuator's pin overloading protection