

# Technical manual

## Type ER Plus Electric actuator

### Summary



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### Description

ER Plus provides you with the best for valve actuation : Electric actuator Type ER plus, compact design with IP66 protection and UL 94 VO flammability class, modular position indicator and secured manual override; modular range of options (Transmitter, potentiometer, extra limit switch cards), Failsafe version, which ensures return to initial position in case of power failure, and Posi version, CE Marking.

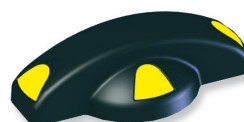
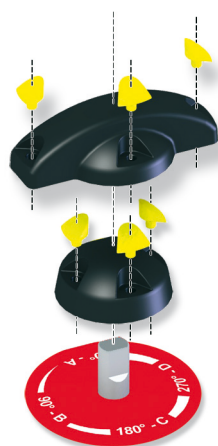
<b>10Nm</b> $\nabla$ <b>100Nm</b>	<b>Facteur de marche</b> <b>50%</b> Duty rating	<b>Indice de protection</b> <b>IP66</b> Enclosure	<b>Résistance de série</b>  Resistor in standard
<b>Système sécurité</b> <b>FAIL SAFE</b> Security system	<b>Positionnement</b> <b>POSI</b> Positioning	<b>3 Positions</b> <b>GF3</b> 3 Positions	

**Technical description**

- Compact design with IP66 protection and UL94V0 flammability class housing.
- Integrated anti-condensation heater.
- Torque limiter monitored by software.
- Motor condition feedback relay (normal duty, failure).
- RS485 connection to enable remote control (on request).
- Modular position indicator.
- Secured manual override.
- Guaranteed 50 000 actuations or 2 years\*.
- Up to 150 starts/Hour.\*\*
- In accordance with CE standards.
- Compliance with RoHs and REACH.
- Pulse control (500ms) on request.

\* Tested on testing bench in the worst conditions (maximal torque & duty rating)

\*\* Recommended use, see instructions notice.



Handle with visual Indicator for ER10-20



Visual Indicator for ER35-60-100

- **Modular position indicator** with 3 removable position markers, adjustable according to the type of valve to be actuated.

- **Different possible rotation angles**

4 adjustable limit switches, 2 for motor controls, 2 auxiliaries for feedback signal

- **Mechanical travel stops** at 90°C (180° or 270° without mechanical stops)

- **Duty rating** S4 - 50% (IEC 34 standard)

- **Self regulated anti-condensation heater** : the heater inside the actuator are anti-condensation systems to avoid the dew point. They prevent from corrosion which would result from excessive humidity inside the housing of the actuator. No additional wiring is required as the heaters are part of the electronic board. The use of the heaters is recommended for outside installation, unfriendly environment and for the refrigeration applications.

- **Standardized ISO 5211 connection** :

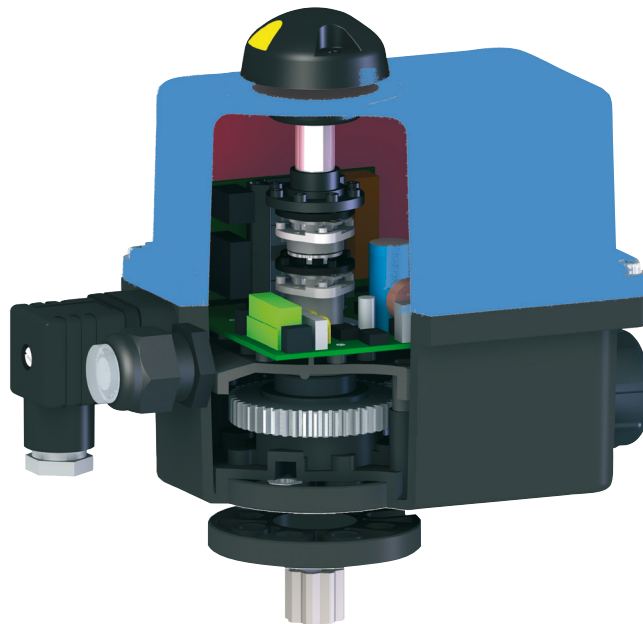
Removable adaptation plates (ER10-20-35 = F03-F04-F05)

ISO 5211 plate with double connection (ER35-60-100 = F05-F07)

Removable stainless steel drive nut sleeves (Star -square - DD)

Other drive nut sleeves available on request.

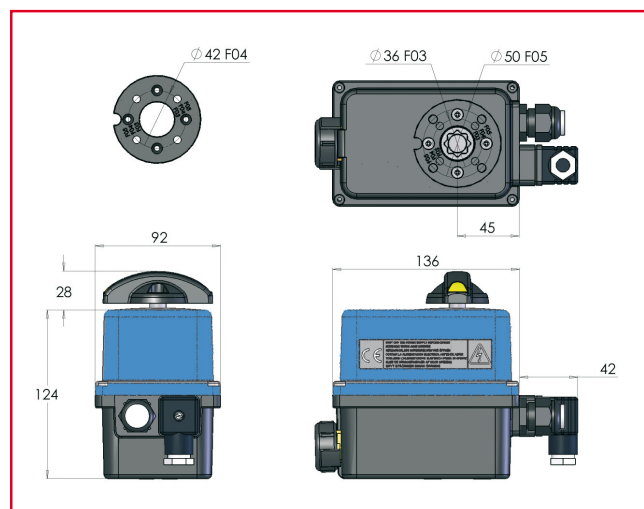
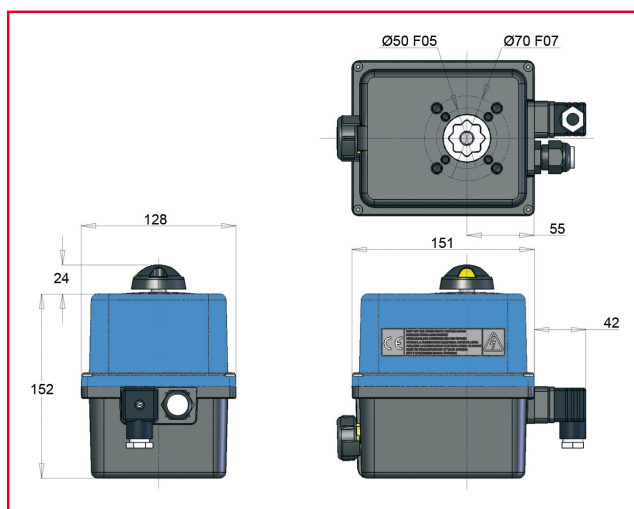
## Technical informations



- From 10 to 100 Nm.
  - Operating time: from 7s to 119s.
  - Duty rating S4 - 50% (IEC34 standard).
  - On-Off or 3 modulating points control .
  - Standardized ISO5211 connection.
  - IP 66 protection.
  - Modular position indicator (with handle for type ER10-20)
  - Actuator based on a direct current technology monitored by electronic card (choice of 2 cards):
    - Either 15V to 30V AC (50/60Hz) or 12V to 48V DC
    - Either 90V to 240V AC (50/60Hz) or 90V to 350V DC
  - Torque limiter monitored by software
  - Declutching system for secured manual override
  - Manual override
  - Mechanical travel stops
  - Different possible rotation angles
  - Version with Failsafe security unit which ensures return to initial position in case of power failure.
  - Posi version: advanced and user friendly positioning solution
  - Options: feedback potentiometer, transmitter, third position card, handle for manual override, two extra limit switches card ...
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- CE marking
  - EMC conformity EN61000-6-4 (2007), EN61000-6-2 (2005)
  - Low voltage Directive EN61010-1 (2001)
  - IP 66 housing tested according to CEI60529 (2001) and NF EN 60529 (2000)
  - Equipment European Directive (security machine) (2006/42/CE) as component.
  - For applications with vibrations (on request), specific electronic cards according to IEC60068-2-6 (2007) and IEC60068-2-17 (2008)

**Overall dimensions**

		ER10	ER20	ER35	ER35	ER60	ER100
TORQUES (Nm)		10	20	35	35	60	100
VOLTAGE		15V to 30V 50/60Hz (12V to 48V DC) 90V to V 240V 50/60Hz (90V to 350V DC)					
OPERATING TIME (sc)	ER Plus standard & Failsafe	11	12	26	7	12	23
	ER Plus slow	-	-	-	40	79	119
	ER Plus Posi	-	25	-	41	79	119
POWER		15W			45W		
STARE DRIVE NUT		14mm -Depth. 16mm			22mm-Depth.24mm		
ISO FLANGE		F03-F04-F05-Depth. 14mm			F05-F07-Depth.16mm		
LIMIT SWITCHES		4					
ROTATION ANGLES		0°-90° (0°-180° or 0°-270°)					
DUTY RATING		50%					
NUMBER OF STARTS/HOUR		150					
PROTECTION		IP66					
TEMPERATURE		-10°C up to +55°C (Failsafe : 10°C up to 40°C)					
WEIGHT (min/max)		1 kg/1,340Kg			2,800kg/3,140Kg		

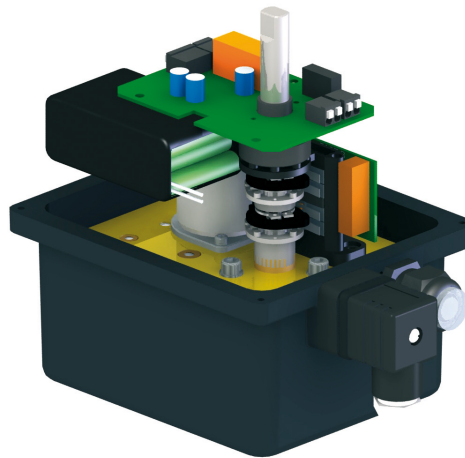
**TYPE ER10-20-35**

**TYPE ER35-60-100**


Type	Voltage	Maxi torque	Iso top square drive	Op. time (sec)	Power (0,15 A)	Kg	Ref.
ER20.50A.G00	1x100V à 240VAC / 100V à 350VDC	20 Nm	F03/F04/F05x14	12	15W	1	149F037485
ER35.50A.G00	1x100V à 240VAC / 100V à 350VDC	35 Nm	F03/F04/F05x14	26	15W	1	149F037487
ER35.90A.G00	1x100V à 240VAC / 100V à 350VDC	35 Nm	F05/F07x22	7	45W	2,1	149F036454
ER60.90A.G00	1x100V à 240VAC / 100V à 350VDC	60 Nm	F05/F07x22	12	45W	2,1	149F036456
ER100.90A.G00	1x100V à 240VAC / 100V à 350VDC	100 Nm	F05/F07x22	23	45W	2,1	149F036458
ER20.50B.G00	15V à 30VAC / 12V à 48VDC	20 Nm	F03/F04/F05x14	12	15W	1	149F037486
ER35.50B.G00	15V à 30VAC / 12V à 48VDC	35 Nm	F05x14	24	15W	1	149F037488
ER35.90B.G00	15V à 30VAC / 12V à 48VDC	35 Nm	F05/F07x22	7	45W	2,1	149F036455
ER60.90B.G00	15V à 30VAC / 12V à 48VDC	60 Nm	F05/F07x22	12	45W	2,1	149F036457
ER100.90B.G00	15V à 30VAC / 12V à 48VDC	100 Nm	F05/F07x22	22	45W	2,1	149F036459

**Range of options**
**FAILSAFE versions**

Version with integrated Failsafe security unit which ensures return to initial position in case of power failure :

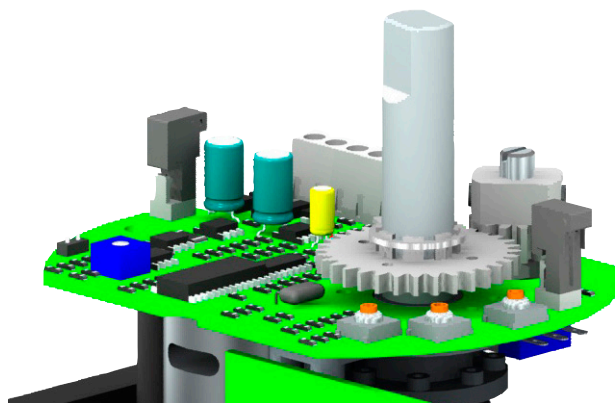
- All in one option: no additional wiring required
- Cost effective
- Battery gauge
- Power shut off after 2 mn to avoid battery discharging
- Quick and easy replacement of the battery
- 2 initial position settings : normally open / normally closed




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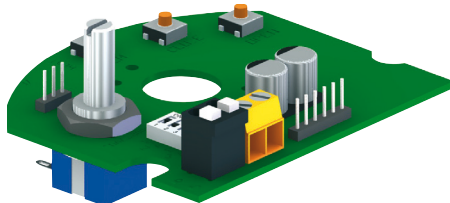
**POSI versions**

- Microprocessor base
- Secured process (memorization loops)
- Self configurable (0-20mA/4-20mA/0-10V)
- Reversible (Example: 20-4mA)
- Training mode
- Electronic torque limiter
- Up to 180° or 270° travel (on request)

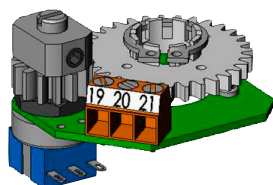


Range of options

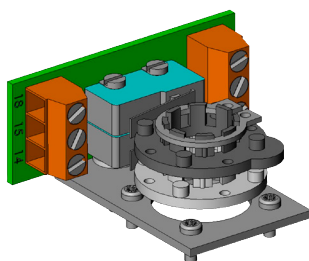
**EPT.C - Transmitter : 0-20mA/4-20mA /0-10V**



**EPR.B - Feedback potentiometer**



**EFC2 - 2 Additional limit switches cards**



**ERP - Handle for manual override**



**Other options :**

**ECD : DIN43650 3P+T connectors**

**EFT.3 Third position card**

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**Socla SAS**

365 rue du lieutenant Putier  
71530 VIREY LE GRAND  
Postal address : CS10273  
71107 CHALON SUR SAONE Cedex

Tel : 33 3 85 97 42 52  
Fax : 33 3 85 97 97 42  
<http://www.socla.com>  
e-mail: [commer@socla.com](mailto:commer@socla.com)