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***LE Range***  
***a new range of actuators***  
***for the building automation***

**B BERNARD**

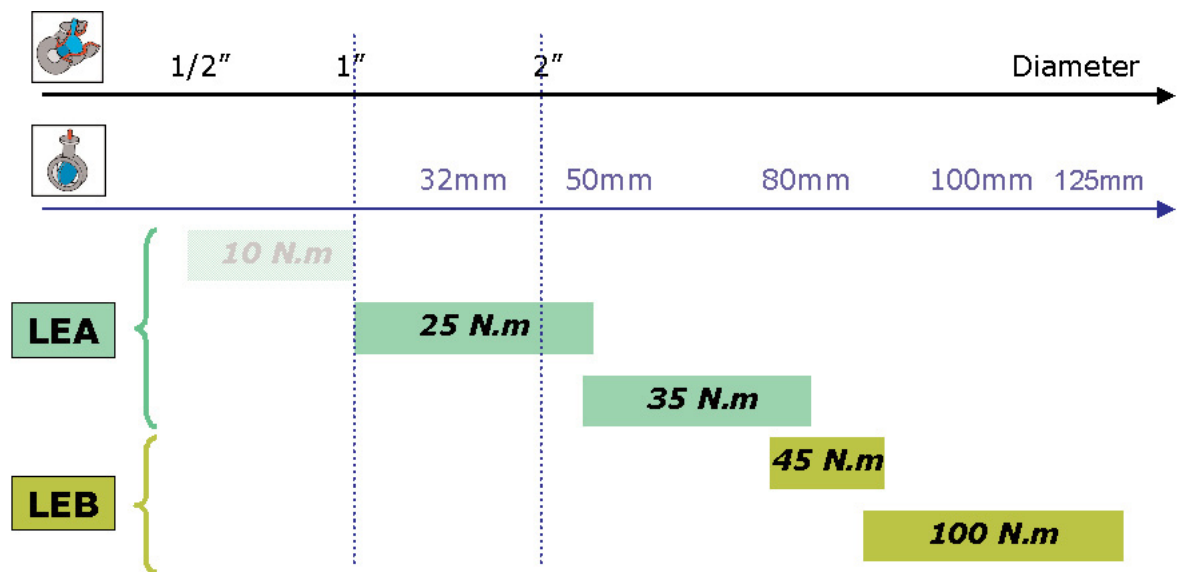
# The LE Range structure

The LE Range is subdivided into two distinct models :

- The LE A with torque values lower than 35 N.m
- The LE B with torque values higher than 35 N.m

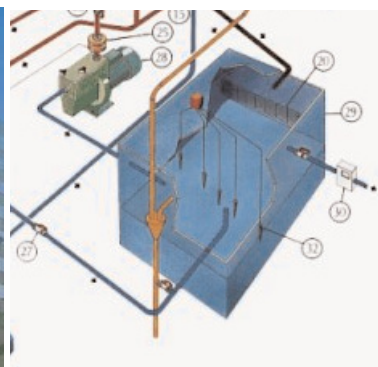
Below, a diagram showing the different models of the LE range.

In front of each model are also given for information the typical sizes of ball and butterfly valves on which they will be mounted.



# LE Range actuators applications

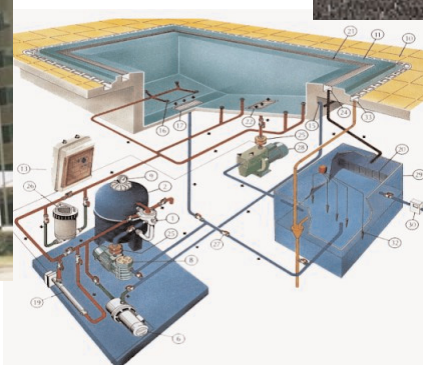
TARGETED MARKETS ARE BUILDING AUTOMATION AND SIMILAR APPLICATIONS SUCH AS :



Building HVAC systems

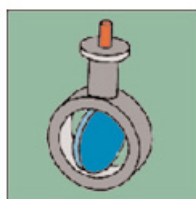


Greenhouses

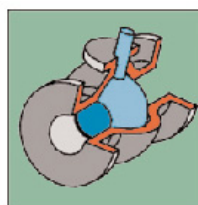


Large public swimming pools

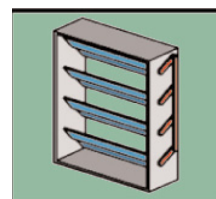
MAIN DEVICES TO BE MOTORISED : SMALL BALL & BUTTERFLY VALVES



Butterfly valves DN 32 to 125 mm



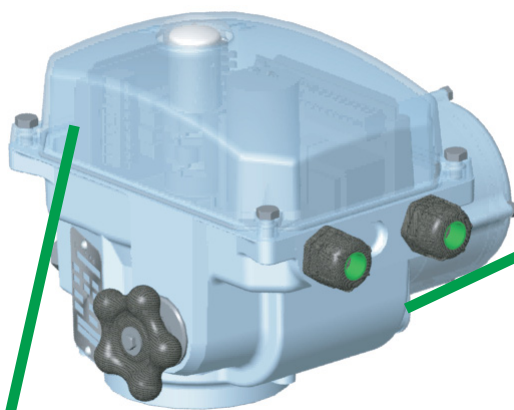
Ball valves DN 1/4 to 2 inches



Dampers may also be motorised with LE actuators

# LE range Advantages and Features

## ENVIRONMENT



*LEB model*

### Polycarbonate cover :

- Shock resistance tested according to standard.
- IP65 ensured by seals.



*LEA model*

### Aluminium body :

- Provides **overall mechanical rigidity**. Important for “high” torque operation.



The LE range actuators are **IP65**.

They withstand ambient temperature within the range **-10 ... +50°C**



They are ideal for an indoor mounting or for external standard conditions.

### Reinforced PA body :

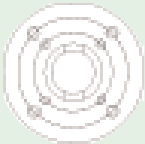
- Provides **mechanical rigidity adapted**. to “moderate” torque operation.

## ADAPTATION TO VALVES (1/2)

Model	Dimensions max. mm	Weight approx.
LEA 2 LEA 3	170 x 125 x 134	1.5
LEB 4	202 x 190 x 184	5.0
LEB 10	245 x 190 x 184	5.5



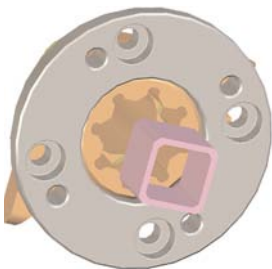
LE range actuators size and weight are adapted to the small dampers, butterfly and ball valves.



LE actuators flanges are conform to ISO5211 and adapted to the small butterfly and ball valves they will be mounted on.



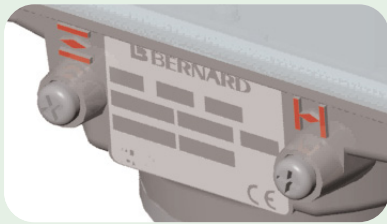
Model	Flange	Square	Flat head	Key
LEA 2 LEA 3	F05 (F04)	9 / 11 / 14 / 17 (*)	9 / 11	---
LEB 4 LEB 10	F05 F07	9 / 11 / 14 / 16 / 17 / 19	14	14 / 18 / 20 / 22



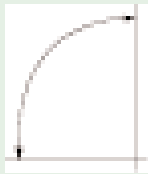
(\*) : LEA output is a 17mm star.

9, 11 & 14mm square are obtained by inserting an extractable socket

## ADAPTATION TO VALVES (2/2)



LE actuators are equipped with **adjustable mechanical end stops**



LE actuators travel is **preset at factory at 90°**. Adjustment of travel of  $\pm 2^\circ$  on both sides can be done **without any specific tool**

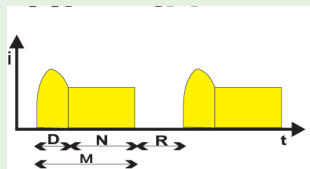


LEB model  
Cams can be adjusted **without any specific tool**



LEA model  
**non-intrusive setting** (mechanical end stops are used to adjust the travel)

## SERVICE DUTY



LE actuators duty cycle factor are given according to **IEC 34 S4**.  
(adapted to butterfly and ball valves operation)

Model	Service duty On-Off	Service duty Proportional control
LEA 2 LEA 3	S4 - 30%	S4 - 30%
LEB 4 LEB 10	S4 - 30%	S4 - 50%

## ELECTRICAL FEATURES

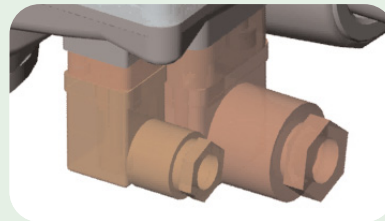
Model	Single phase	Low voltage
LEA 2 LEA 3	Universal supply : 115 ... 230 VAC 50 / 60Hz	24 V AC/DC
LEB 4	3 versions : 115 VAC 50/60Hz 230 VAC 50Hz 230 VAC 60Hz	24 V AC/DC
LEB 10	3 versions : 115 VAC 50Hz 115 VAC 60Hz 230 VAC 50/60Hz	24 V AC/DC



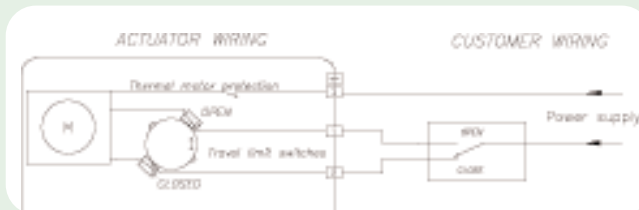
LE range actuators can operate on the most standard power supplies.

Fast electric connection can be achieved with the use of **plug connectors**

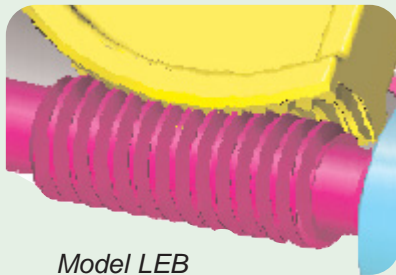
It is a standard feature of the LEA  
It is an option device of the LEB.



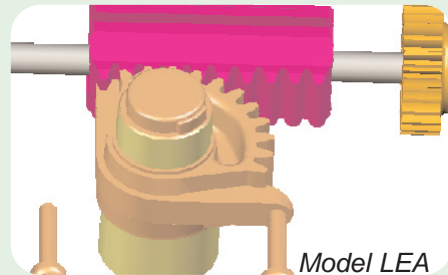
All LE actuators use a simple and straightforward **3 wire wiring diagram even for 24V versions**



## MECHANICAL FEATURES (1/2)

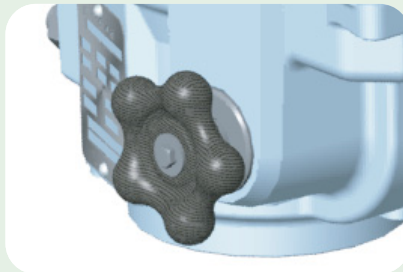


Model LEB

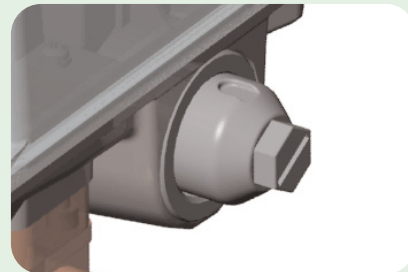


Model LEA

LE actuators have a **self-locking final gear**.



Model LEB



Model LEA

LE actuators are equipped with a **manual override system always available and mounted on an intermediate gear**.



LE actuators **position indicator is highly visible**.



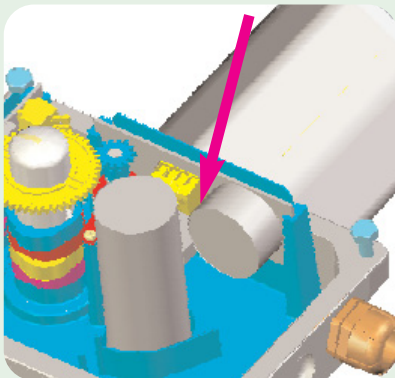
## MECHANICAL FEATURES (2/2)

LE Range products are tested for a lifetime of  
**20,000 travels minimum**

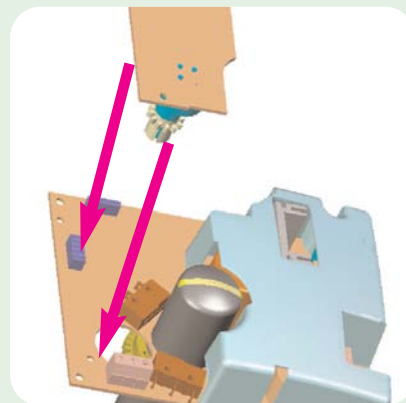
## OPTIONAL BOARDS

Numerous, high quality and easy to mount options :

- Heater (LEB only)
- Plastic track potentiometer (1 kOhm)
- TAM transmitter (0 / 4 ...20mA)
- Proportional signal control board (0-10V ; 0 / 4 ...20mA)



Model LEB



Model LEA

Optional boards are easy to install (plugged).

# LEA part numbers

Voltage	Controls / Wiring	Output socket	Pot 1kOhm	Xmitter	Part Number
<b>LEA 2 / On-Off</b> 25 N.m / T90° = 20s					
115-230 VAC 50/60Hz	Prewired	None			LE-2E020NCZP010
115-230 VAC 50/60Hz	Prewired	None	●		LE-2E020NCZP011
115-230 VAC 50/60Hz	Prewired	None		●	LE-2E020NCZP012
24 VAC/DC	Prewired	None			LE-2E020CEZP010
24 VAC/DC	Prewired	None	●		LE-2E020CEZP011
24 VAC/DC	Prewired	None		●	LE-2E020CEZP012
<b>LEA 3 / On-Off</b> 35 N.m / T90° = 20s					
115-230 VAC 50/60Hz	Prewired	None	●		LE-3E020NCZP010
115-230 VAC 50/60Hz	Prewired	None	●		LE-3E020NCZP011
115-230 VAC 50/60Hz	Prewired	None		●	LE-3E020NCZP012
24 VAC/DC	Prewired	None			LE-3E020CEZP010
24 VAC/DC	Prewired	None	●		LE-3E020CEZP011
24 VAC/DC	Prewired	None		●	LE-3E020CEZP012
<b>LEA 3 / Positioner</b> 35 N.m / 20 s					
115-230 VAC 50/60Hz	Positioner	None			LE-3EN35NCZP010
24 VAC/DC	Positioner	None			LE-3EN35CEZP010
<b>Standard size sockets</b>					
Square (Parallel or Diagonal)	9 mm				7516883
Square (Parallel or Diagonal)	11 mm				7516858
Square (Parallel or Diagonal)	14 mm				4300187
Flat head	9 x d12mm				7516884
Flat head	11 x d14 mm				7516859

# LEA spare parts list

Description	P/N
<b><i>ELECTRONIC AND ELECTRIC ITEMS</i></b>	
LEA 2 main PC board - 115...230 VAC 50/60Hz	97700753
LEA 2 main PC board - 24 VAC/DC	97700754
LEA 3 main PC board - 115...230 VAC 50/60Hz	97700755
LEA 3 main PC board - 24 VAC/DC	97700756
Set of 2 plug connectors	97700757
LEA position transmitter board	97700760
1 kOhm Potentiometer with board and gears	97700759
LEA proportional control board	97700761
<b><i>MECHANICAL ITEMS</i></b>	
LEB plastic cover with screws and gasket	97700758

# LEB part numbers

Voltage	Controls / Wiring	Output socket	Heater	Pot 1kOhm	TAM Xmitter	Part Number
<b>LEB 4 / On-Off</b>						
<b>45 N.m / 6 s</b>						
230 VAC 50Hz	Prewired	None				LE-4E006MBZP010
230 VAC 50Hz	Prewired	None	●			LE-4E006MBZP110
230 VAC 50Hz	Prewired	None		●		LE-4E006MBZP011
230 VAC 50Hz	Prewired	None			●	LE-4E006MBZP012
230 VAC 50Hz	Prewired	None	●	●		LE-4E006MBZP111
230 VAC 50Hz	Prewired	None	●		●	LE-4E006MBZP112
115 VAC 50/60Hz	Prewired	None				LE-4E006NCZP010
115 VAC 50/60Hz	Prewired	None	●			LE-4E006NCZP110
115 VAC 50/60Hz	Prewired	None		●		LE-4E006NCZP011
115 VAC 50/60Hz	Prewired	None			●	LE-4E006NCZP012
115 VAC 50/60Hz	Prewired	None	●	●		LE-4E006NCZP111
115 VAC 50/60Hz	Prewired	None	●		●	LE-4E006NCZP112
24 VAC/DC	Prewired	None				LE-4E006CEZP010
24 VAC/DC	Prewired	None	●			LE-4E006CEZP110
24 VAC/DC	Prewired	None		●		LE-4E006CEZP011
24 VAC/DC	Prewired	None			●	LE-4E006CEZP012
24 VAC/DC	Prewired	None	●	●		LE-4E006CEZP111
24 VAC/DC	Prewired	None	●		●	LE-4E006CEZP112
<b>LEB 10 / On-Off</b>						
<b>100 N.m / 35 s</b>						
230 VAC 50Hz	Prewired	None				LE10E035MBZP010
230 VAC 50Hz	Prewired	None	●			LE10E035MBZP110
230 VAC 50Hz	Prewired	None		●		LE10E035MBZP011
230 VAC 50Hz	Prewired	None			●	LE10E035MBZP012
230 VAC 50Hz	Prewired	None	●	●		LE10E035MBZP111
230 VAC 50Hz	Prewired	None	●		●	LE10E035MBZP112
115 VAC 60Hz	Prewired	None				LE10E035NCZP010
115 VAC 60Hz	Prewired	None	●			LE10E035NCZP110
115 VAC 60Hz	Prewired	None		●		LE10E035NCZP011
115 VAC 60Hz	Prewired	None			●	LE10E035NCZP012
115 VAC 60Hz	Prewired	None	●	●		LE10E035NCZP111
115 VAC 60Hz	Prewired	None	●		●	LE10E035NCZP112
24 VAC/DC	Prewired	None				LE10E035CEZP010
24 VAC/DC	Prewired	None	●			LE10E035CEZP110
24 VAC/DC	Prewired	None		●		LE10E035CEZP011
24 VAC/DC	Prewired	None			●	LE10E035CEZP012
24 VAC/DC	Prewired	None	●	●		LE10E035CEZP111
24 VAC/DC	Prewired	None	●		●	LE10E035CEZP112
<b>LEB 10 / Proportional signal control</b>						
<b>100 N.m / 35 s</b>						
230 VAC 50Hz	Positioner board	None				LE10EN35MBZP010
115 VAC 50/60Hz	Positioner board	None				LE10EN35NCZP010
24 VAC/DC	Positioner board	None				LE10EN35CEZP010

# LEB spare parts list

Description	P/N
<b>MOTORS</b>	
LEB 230 VAC motor	251 00 19
LEB 115 VAC motor	251 00 70
LEB 24 V motor	88 10 333
<b>ELECTRONIC AND ELECTRIC ITEMS</b>	
LEB travel limit switches board - 115/230 VAC	341 03 00
LEB end of travel limit switches board - 24 V	341 03 01
LEB position transmitter board	881 03 80
1 kOhm Potentiometer with board and gears	881 03 79
LEB heater board - 230 VAC	341 03 02
LEB heater board- 115 VAC	341 03 03
LEB heater board - 24 V	341 03 04
LEB positioner board - 230 VAC	Please consult us
LEB positioner board - 115 VAC	Please consult us
LEB positioner board - 24 V	Please consult us
<b>MECHANICAL ITEMS</b>	
LEB plastic cover with screws and gasket	881 03 76
End of travel cam	091 01 35
LEB intermediate reduction gear (P-gear)	881 00 86
Handwheel	430 00 69



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