

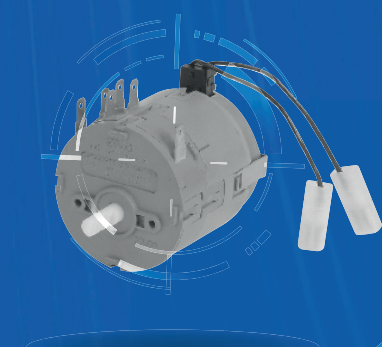
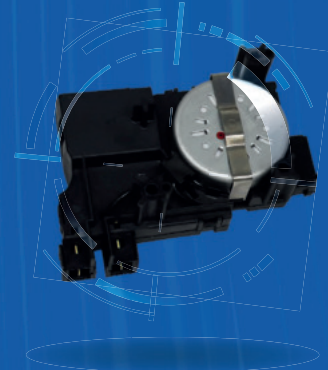
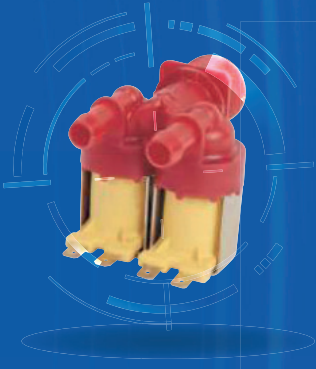
emied

• PARTS •

ORIGINAL PARTS MANUFACTURER



COMPONENTS



ORIGINAL PARTS MANUFACTURER:
FABRICANTE DE PARTES ORIGINALES:
FABRICANTE DE PEÇAS ORIGINAIS PARA:

LAUNDRY
LAVARROPAS
LAVANDERIA



COOKING
ESTUFAS
COCCÃO



REFRIGERATION
REFRIGERACIÓN
REFRIGERAÇÃO



AUTOMOTIVE
AUTOMOTRIZ
AUTOMOTIVO



AGRIBUSINESS
AGRÍCOLA
AGRONEGÓCIO

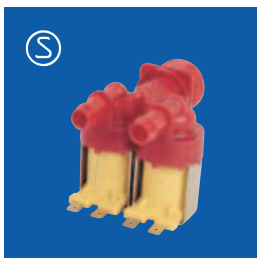


ENVIRONMENTAL
AMBIENTAL
AMBIENTAL



Products and Applications

"We give us the right to change specifications without prior notice. We also exempt from any responsibility by applications that not attend our specification and not approved by us.", Emicol Eleiro Eletrônica S.A.



EVA 09

Water valves - EVA Series - SEE PAGE 1.X

Application: washing machines, dish-washers, automatic faucets, ozone machines, ice machines, water purifiers, etc.

Electromagnetic valves are used to automatically control water entry. The mechanical configuration may be changed to meet specific applications (type of thread, position and type of holder, coil position, non toxic, flow etc.).



EPR 06

Level Controller - EPR Series - SEE PAGE 2.X

Application : Supervision of liquid level in washing machines, dish-washers, bath-tubs, laboratory equipment, etc.

The switch's contacts are activated by means of membrane by air pressure between 50 and 510 mm H₂O. It can be Adjustable or Fixed.



1-EUS 03
2-EUS 04
3-EUS 06

Electronic Spark Modules - EUS Series - SEE PAGE 3.X

Application: ignition of gas in ovens, ranges, heaters, boilers, etc.

Built-in electronic product, used for automatic ignition, does not have mechanical parts. Low electrical consumption, low electrical noise and reduced radio interference, in comparison to the electromechanical ignitors.

Options: 1 to 8 outputs. Besides the standard model, EMICOL also offers a "Timed" model (which remains operating for 4 sec).



1-ECR 02
2-ECR 03

Rotary switches - Serie ECR SEE PAGE 4.X

Application: Air conditioner, Washing machines, Electrical ovens, Heaters, etc.

Rotary Switch with high current capacity (up to 25A), can be configured electrically and mechanically up to 8 positions, using several types of bodies.

Eligible two types fixation system (conditioned to the model): two screws or central thread with nut.



1-EMC
2-EMO
3-EEC

Encoders - EMC, EMO, EEC Series - SEE PAGE 5.X

Application: washing machines, etc.

Manual and motorized switch from low to high current applications, can be configured electrically or generate a gray code for each position.

Products and Applications



1 - ETM 01
2 - TLC

1- Electromechanical Timers - ETM Series - SEE PAGES 6 .X

Application: cloth dryers, washing machines, electric ovens, amalgam equipment, hair dryers, air conditioners, sauna equipment, electronic controls, etc.

Product composed by a synchronous motor and a gear reducer.

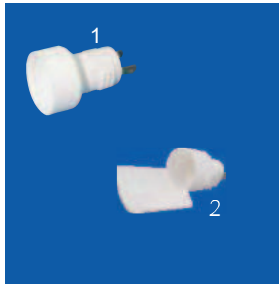
The timing diagramm may be configured according to customer's needs.

Standard models: 1 minute, 15 minutes, 30 minutes, 1 hour, 2 hours and 9 hours.

Electric contacts: up to 2 N.O. contacts (current up to 16A) and 1 N.C.

2. Electromechanical Timers (Timers) - TLC Series - SEE PAGES 6.X

Applications: washing machines with ot without reversal.



1 - ESL 01
2 - ESL 03

Lamp socket - ESL Series - SEE PAGES 8.X

For tubular lamp (E14) - 9 threads per inch - used in freezers, refrigerators, etc.

Available also for Ecological Refrigerator Gas (Isobutane).



Traction Module - MTE Series - SEE PAGES 9.X

This product consists of a traction device with free return when disconnected. It was developed as a new option to replace the present magnetic actuators used in washing machines brake systems, per their high noise level and high cost. The Traction Module brings a reduced noise level, with a more accessible cost and superior reliability, compared to the mechanisms commonly used for this application.



EBE 04

Drain Pump - EBE Series - SEE PAGES 10.X

Emicol Synchronous Pump's function is draining liquids, which has optionally thermal protection or protection by impedance. Main applications: Dishwashers, Washing Machines, Pressurizados Shower, Pressure Devices, etc.

EVA Series (Water Valve)

TECHNICAL SPECIFICATIONS

Materials:

Body: thermoplastic
Filter: plastic (removable)
Metallic parts: zinc - plated steel
Membrane: rubber (standard)
 silicon (non toxic)
Terminals: brass

Markings:

according to customer's specifications

Operating pressure:

0.2 to 8.0kgf/cm²
(minimum flow = 7 l/min. at 0.2 kgf/cm²;
maximum flow = 40 l/min. at 8.0 kgf/cm²)
optional - flow control (5 l/min, 6.5 l/min, 8 l/min,
12 l/min., 20 l/min.)
2kgf / cm² maximum pressure to EVA 08

Maximum liquid temperature: 60°C

Dielectric strength: 1,500 Vac - 1min.

Water outlet (connection for hose):

Geometrical disposition in relation to the hose:

- * straight
- * 90°

Number of inlets/outlets:

- * 1 inlet / 1 outlet
- * 1 inlet / 2 outlets
- * 1 inlet / 3 outlets

Operating life:

> 50,000

Type of terminal (voltage source):

Standard straight / folded (contact us)
Faston 6.3mm x 0,8mm;
Faston 4.8mm x 0,8mm.

Voltage: 127 Vac/ 60Hz (yellow coil)
220 Vac/ 50-60Hz (black coil)
220-240 Vdc / 50Hz (red coil)
12 Vdc (blue coil)
24 Vdc (green coil)
Other voltage rating contact us

Water inlet: Thread

- 1... 3/4" x 11,5 - NHT
- 2... 3/4" x 14 - NBR-8133
- 3... water inlet for a 8,5mm hose (EVA 08)
- 4... 1/2" x 14 - NBR - 8133 (EVA 18)
- 5... 1/2" x 14 - NPT (EVA 18)

Optional: Ground terminal

Outlet dimensions (mm)

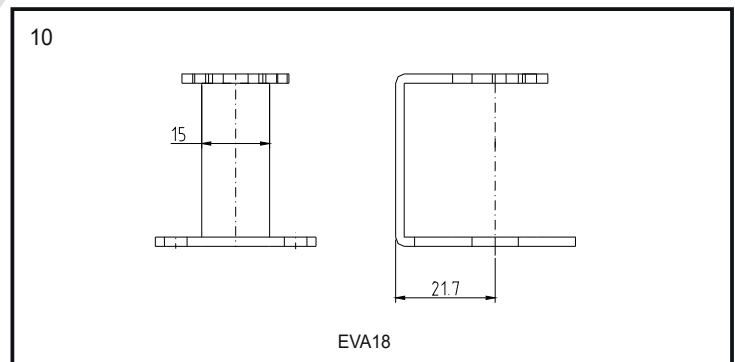
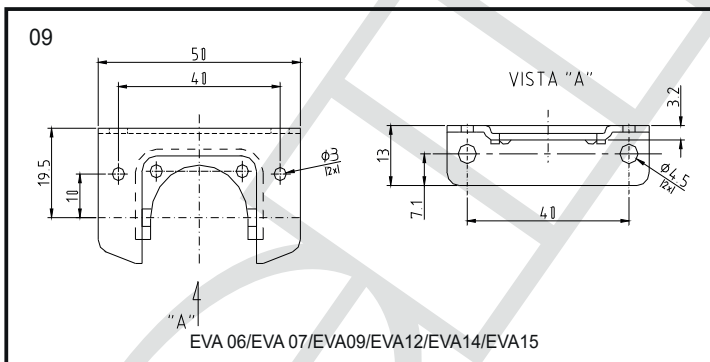
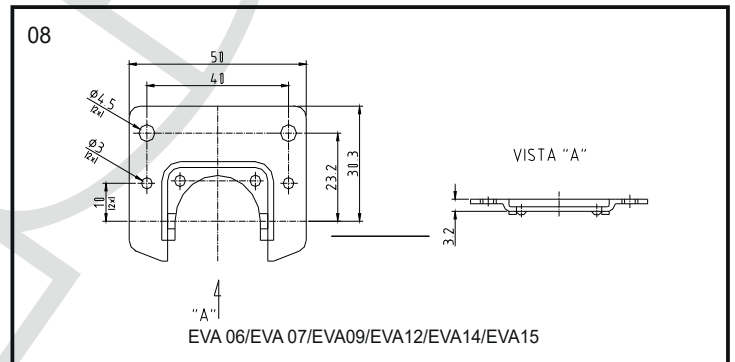
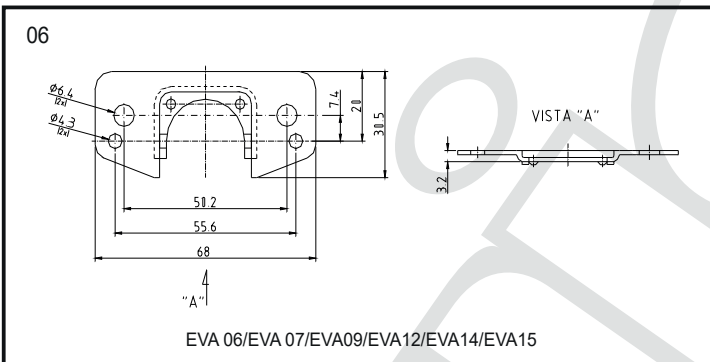
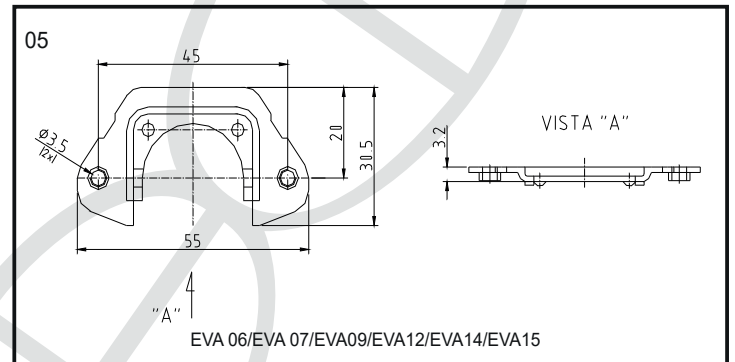
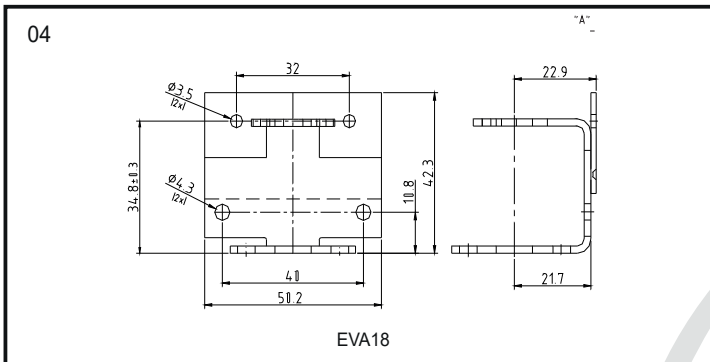
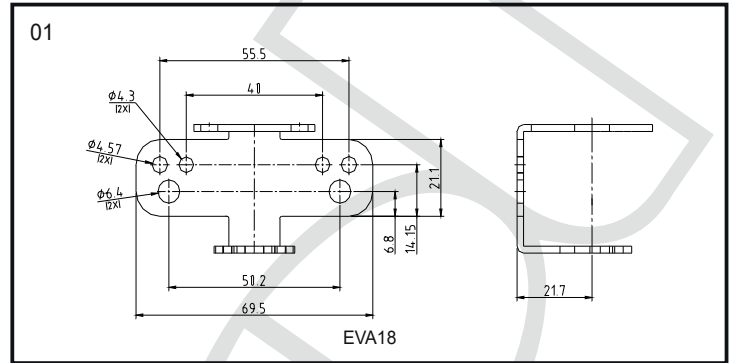
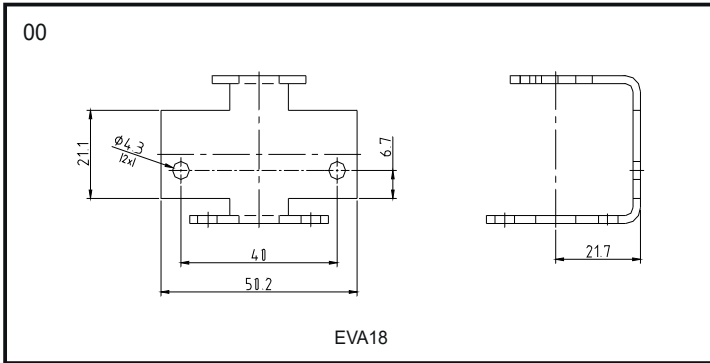
Code	ØB	ØC	Models
01	13.5	14.5	EVA 06, EVA 07
06	10.5	12.5	EVA 07
07	10.5	12.0	EVA 06, EVA 09, EVA 14
08	10.5	--	EVA 10 , EVA 11
09	6.5	--	EVA 08
10	rosca 3/8"	19 FPP	EVA 09, EVA 07
11	10.2	--	EVA 12, EVA 15
12	rosca 1/2"	14 FPP	EVA 18
13	8	--	EVA 17

Mounting positions and arrangement of terminals in relation to water inlet and/or outlet:

On request

EVA Series A (Water Inlet Valve)

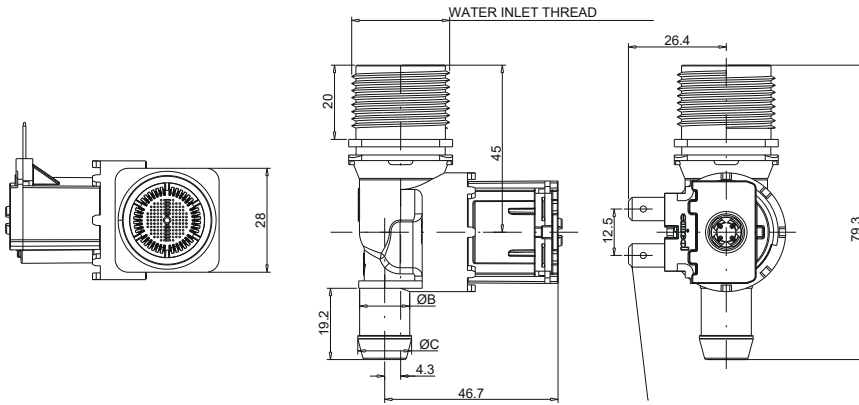
Types of holder:



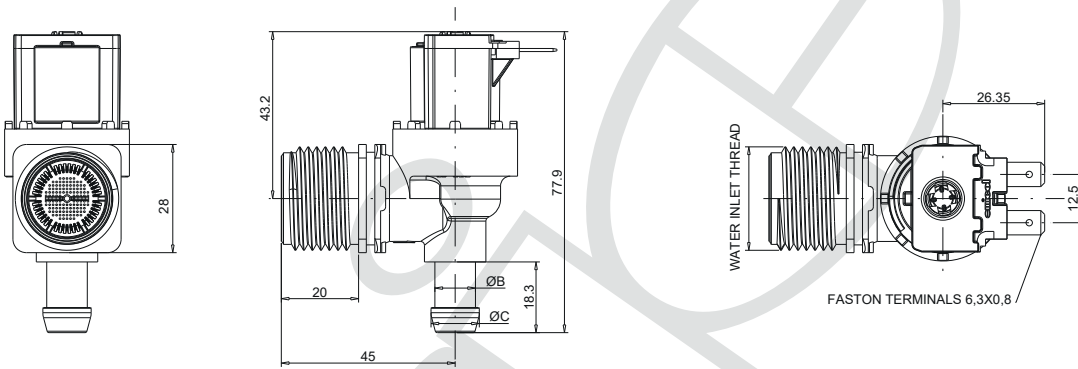
"We give us the right to change specifications without prior notice. We also exempt from any responsibility by applications that not attend our specification and not approved by us." Emicol Eletro Eletrônica S.A.

EVA Series

EVA 06 Model - Water valve - straight
Compact version 1 inlet and 1 outlet



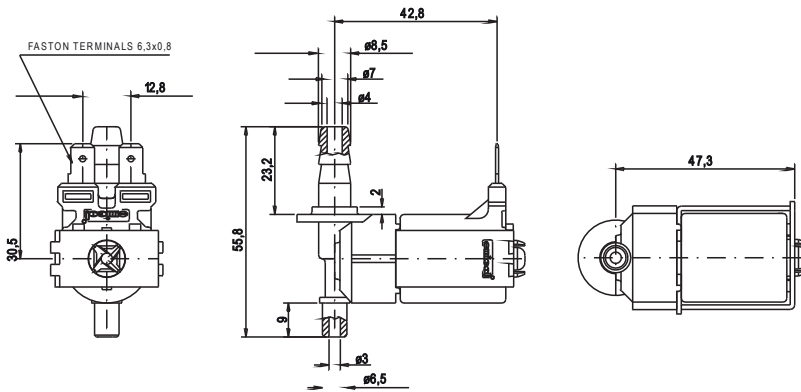
EVA 07 Model - Water valve - 90°
Compact version 1 inlet and 1 outlet



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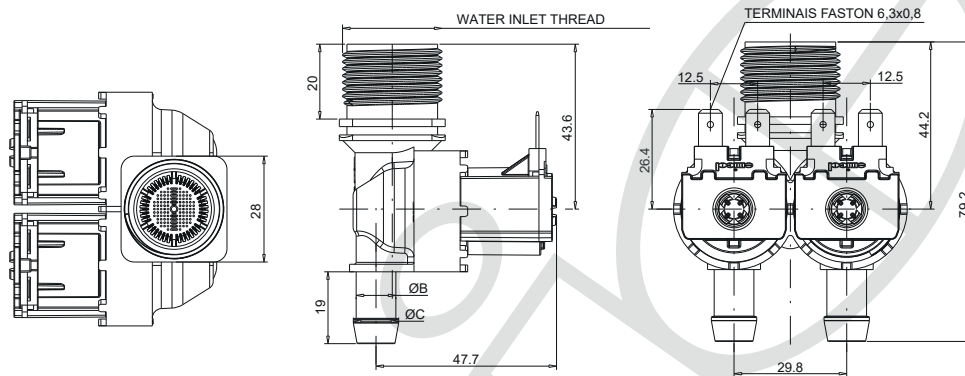
EVA Series

EVA 08 Model - Water valve - straight Compact version 1 inlet and 1 outlet



Obs: Holder code 6 used in the example (refer to table on page 1.2)

EVA 09 Model - Water valve - straight Compact Version 1 inlet and 2 outlets



Catalog numbering sequence
(refer to check list for samples and quotations)

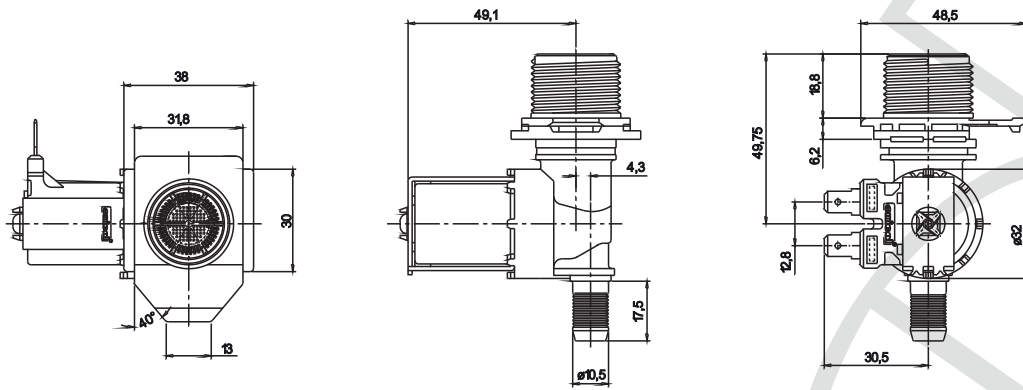
EVA	09	1	A	4	4	2	0	0	05	02	3	ZZ
Series	Model 03 09** 11 14	Voltage 1... 127Vac/ 60Hz 2... 220Vac/ 50-60Hz 3... 12Vdc 4... 24Vdc** 5... 220-240Vac/ 50Hz	Position of the water inlet in relation to the holder* A*... C...	Position of coil A in relation to the holder (see technical Specifications)***	Position of the coil B in relation to the holder (see technical Specifications)***	Water inlet thread (See technical specifications) For EVA 14 Model only option 2 is applicable	Ground Terminal 0 ... Without* 1 ... With	Version 0 ... normal 1 ... non toxic	Holder (See technical specifications) or zz...Without	Water outlet Dimensions (see technical specifications)	Position of the holder in relation to the water (See technical specifications) or z...not applicable	Flow regulator* 05...5 l/min 08...8 l/min 12...12l/min 20...20l/min A... 6,5l/min zz...without (standart 40l/min)
			* For EVA 09, EVA 11 and EVA 14 models, only A is possible									*Different outflow for each regulator, contact us

** Obligatory option for Semko Certification

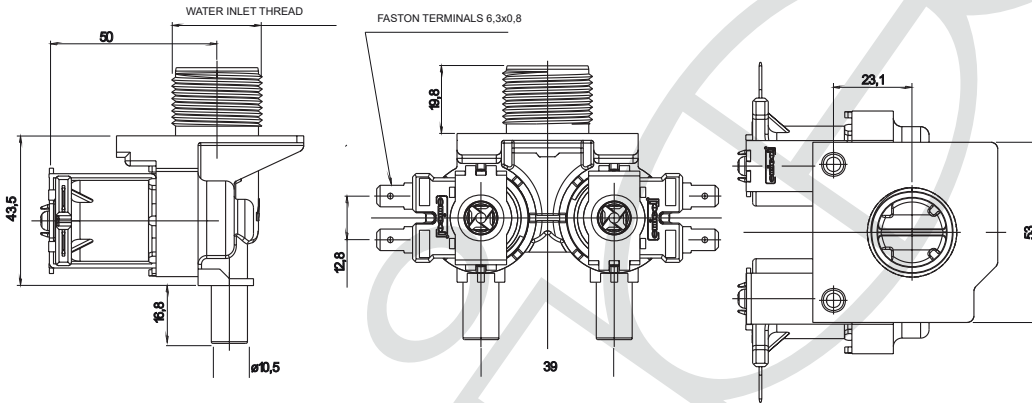
*** For EVA 03 model only the options 0 and 4 are possible.

EVA Series

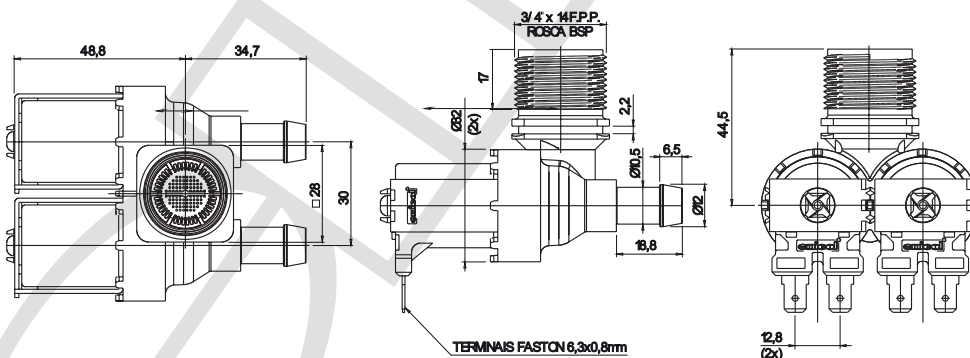
EVA 10 Model - Water valve - straight
1 inlet and 1 outlet



EVA 11 model - Water valve - straight (with plastic holder)
1 Inlet e 2 outlet



EVA 14 Model - Water Valve - 90°
Compact Version - 1 inlet e 2 outlet

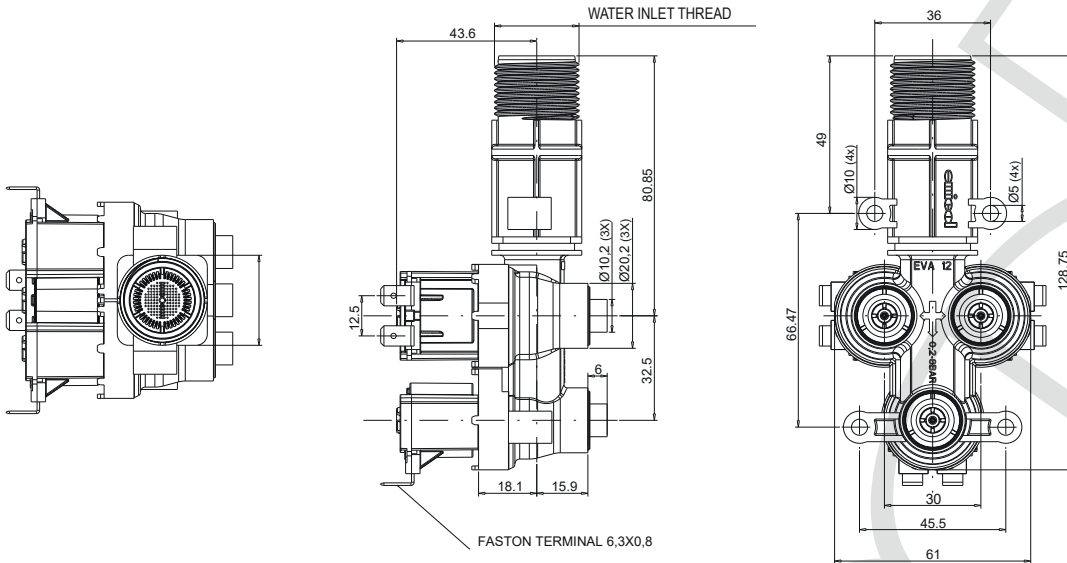


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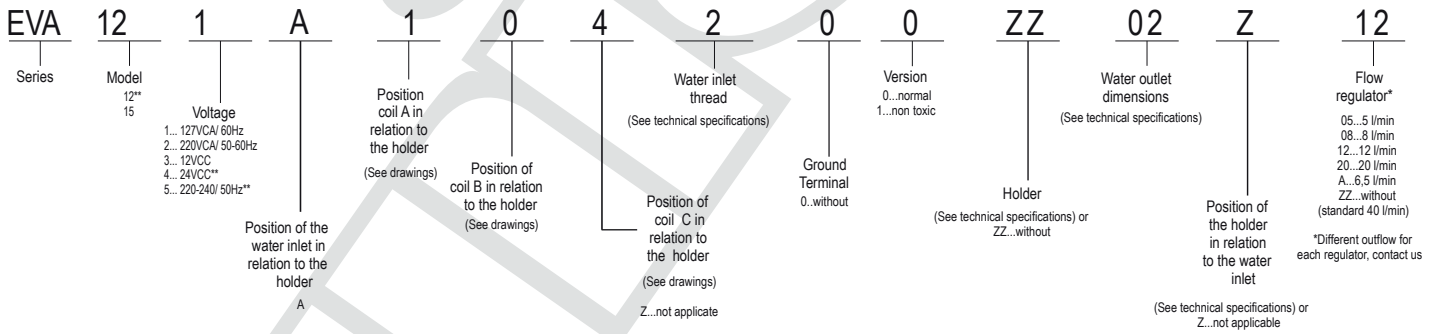
EVA Series

EVA 12 Model - Water valve - straight (1 inlet and 3 outlets)

eitrônica S.A.



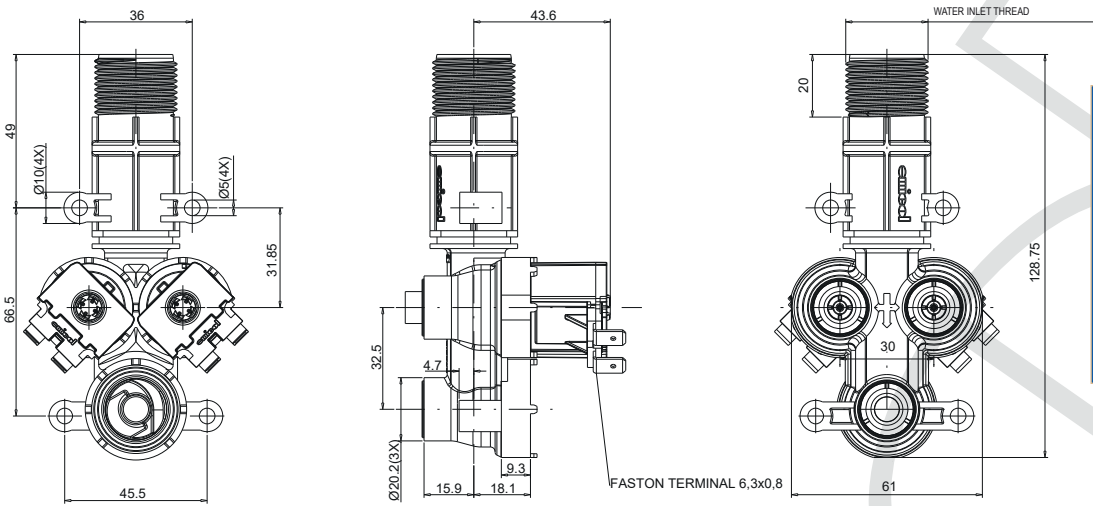
Catalog numbering sequence (refer to check-list for samples and quotations)



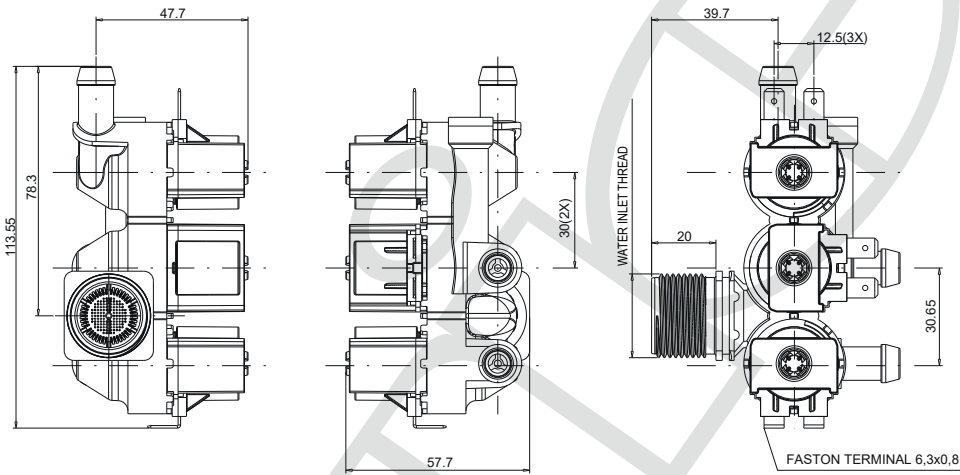
** Obligatory option for Semko Certification

EVA Series

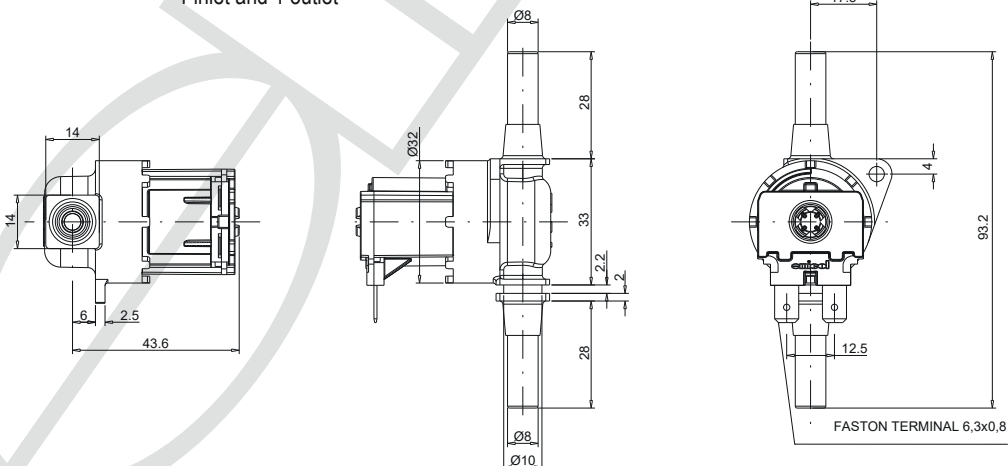
EVA 15 model - Water Valve - straight
1 Inlet and 2 outlet



EVA 16 model - Water Valve Straight
1 Inlet e 3 outlet



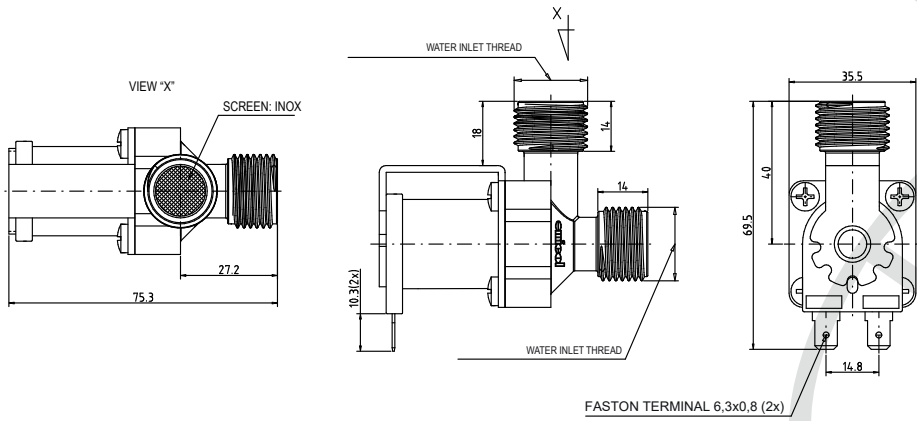
EVA 17 model - Water Valve - straight
1 inlet and 1 outlet



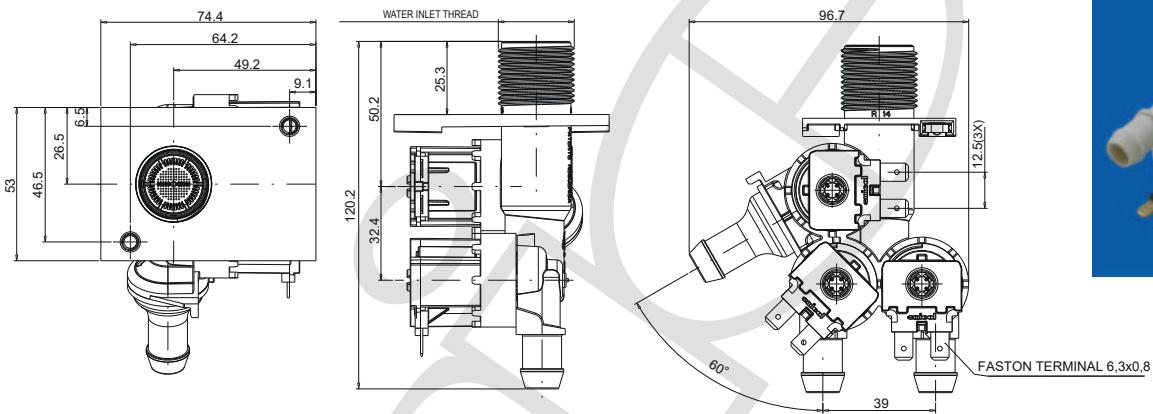
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EVA Series

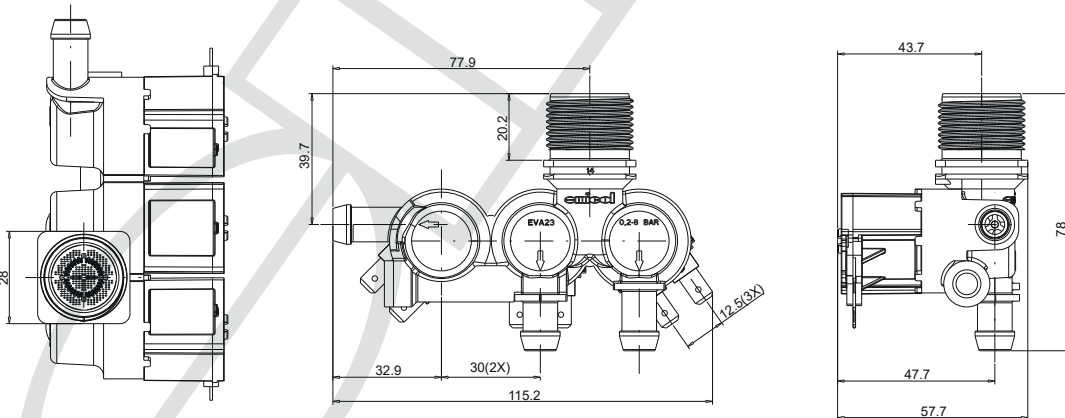
EVA 18 model - Water Valve
1 Inlet and 1 outlet 1/2"



EVA 20 model - Water Valve
1 Inlet and 3 outlet

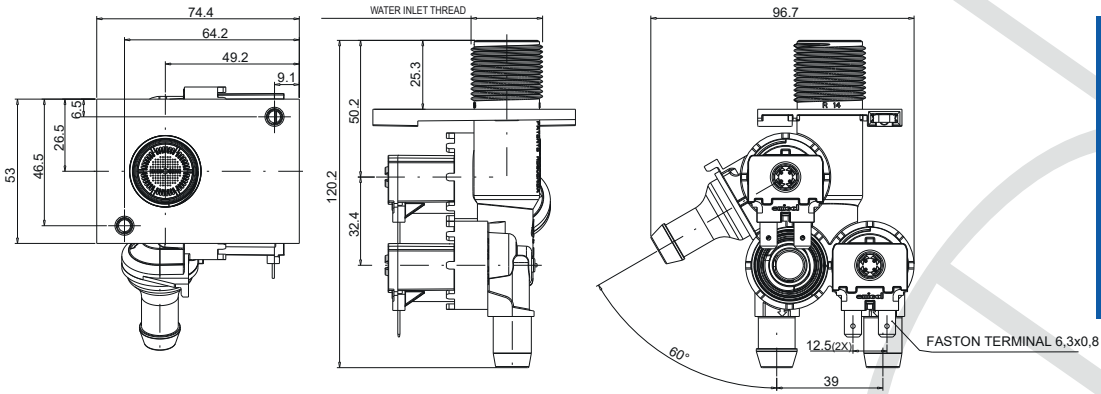


EVA 23 model - Water Valve
1 Inlet and 3 outlet

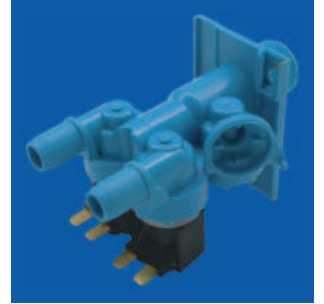
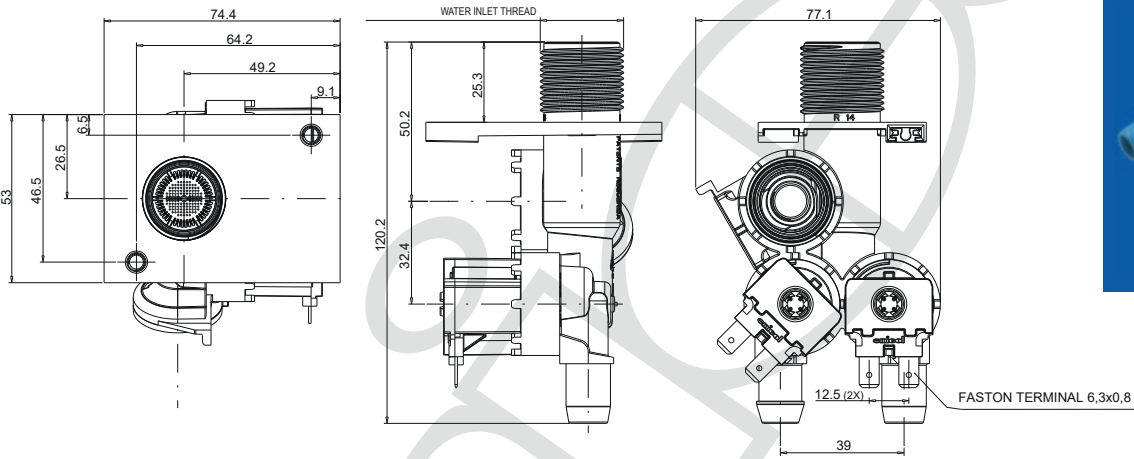


EVA Series

EVA 24 model - Water Valve
1 Inlet and 3 outlet

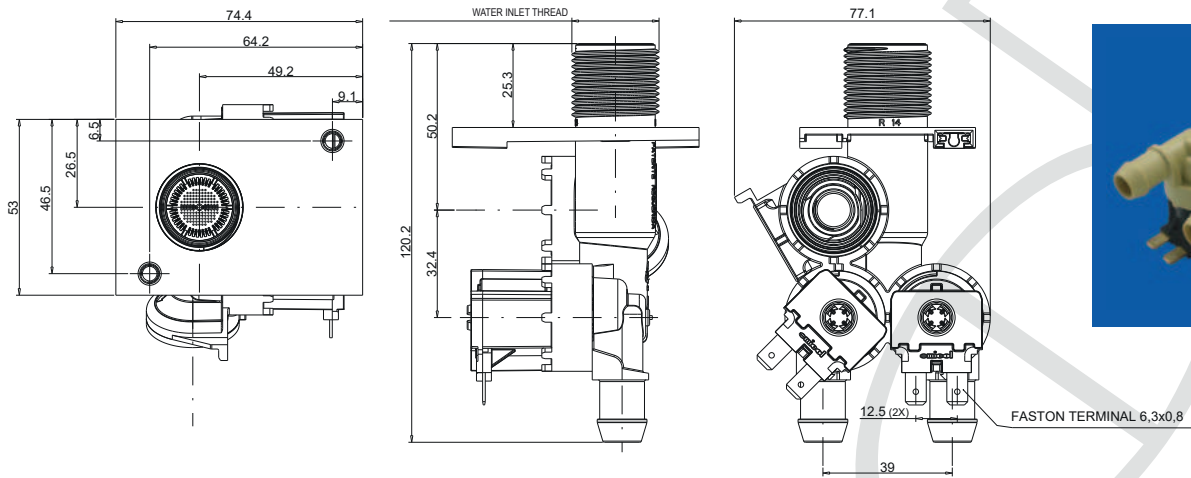


EVA 25 model - Water Valve
1 Inlet and 2 outlet

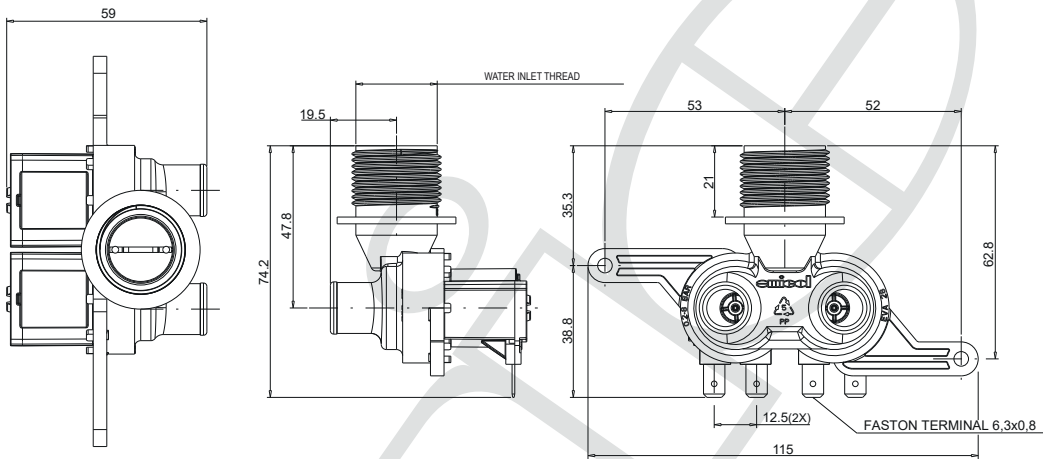


EVA Series

EVA 27 model - Water Valve
1 Inlet and 2 outlet



EVA 28 model - Water Valve
1 Inlet and 2 outlet

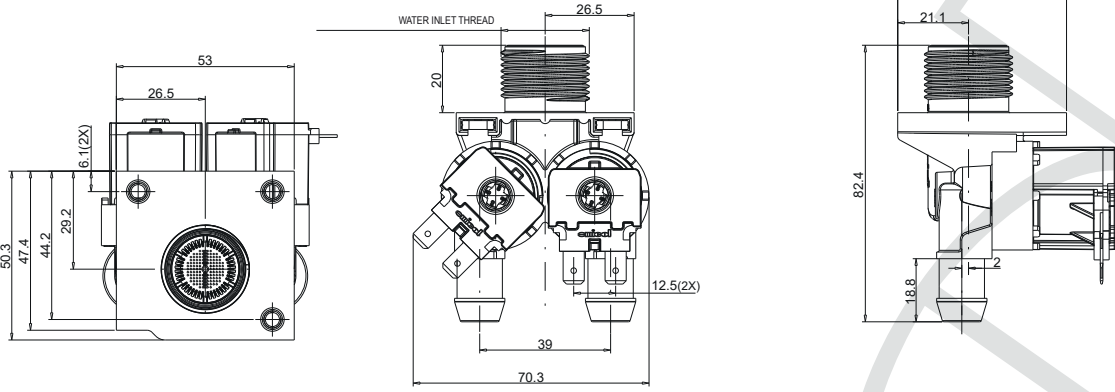


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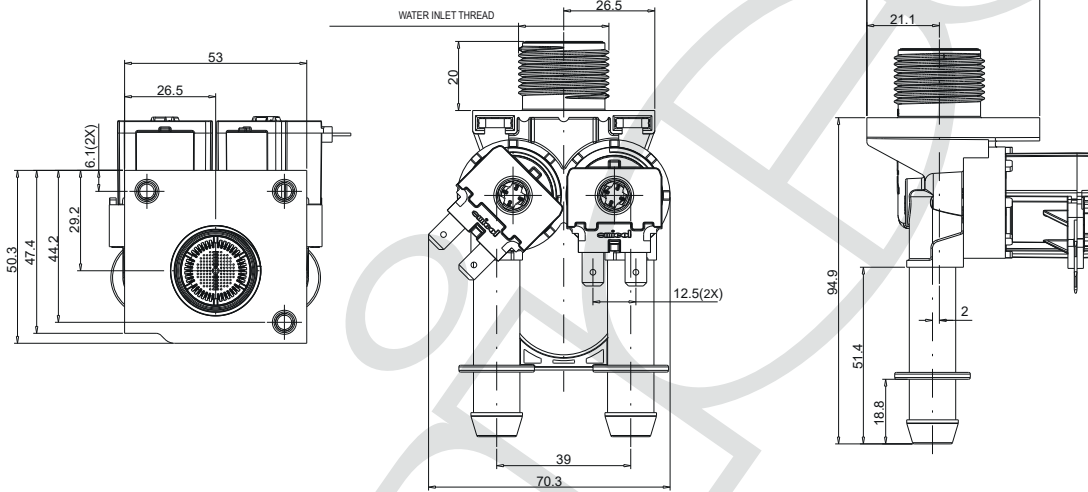
eitrônica S.A.

EVA Series

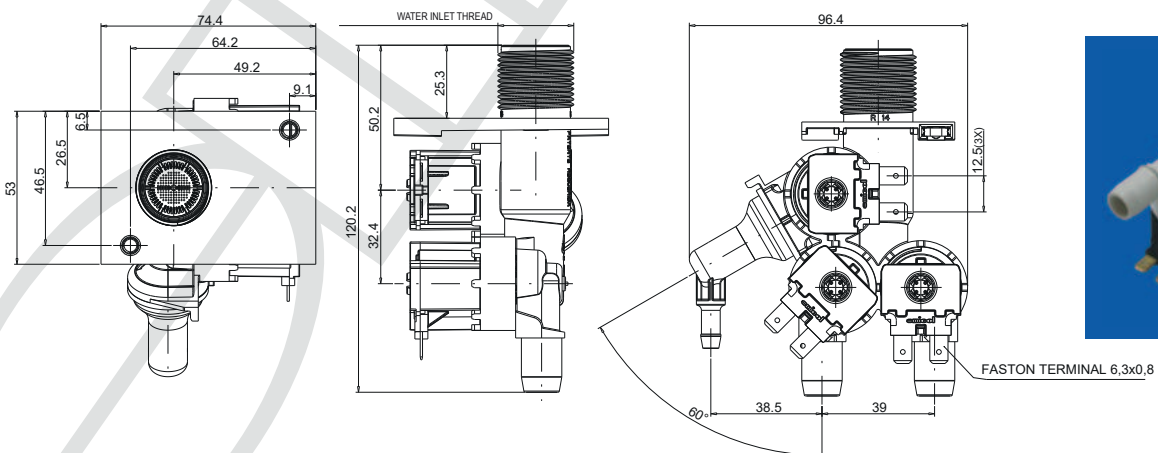
EVA 30.A model - Water Valve
1 Inlet and 2 outlet



EVA 30.B model - Water Valve
1 Inlet and 2 outlet



EVA 32 model - Water Valve
1 Inlet and 3 outlet



Check-list for samples and quotations

In order to assure the preparation of adequate samples and quotations for your application, please provide us with the following information:

1. Model of water valve:
 - * dimensions/geometry
 - * geometric disposition of the outlet in relation to the inlet: straight or 90°
 - * number of inlets/outlets: 1 inlet/1 outlet, 1 inlet/2 outlets or 1 inlet / 3outlets.
 - * filter type: removable
2. Coil voltage: 127 Vac/60Hz, 220 Vac/50-60Hz, 220-240 Vac/50Hz, 12 Vdc or 24 Vdc
3. Position of the inlet in relation to the holder: A, B, C or D (refer to drawing 1)
4. Position of the coil in relation to the holder: housing number 1, 2, 3, 4 or 5 (refer to drawing 1)
5. Type of thread for the water inlet: 3/4" x 11.5FPP - NHT or 3/4" x 14FPP - NBR - 8133 or 3/8" x 19FPP or 1/2"x 14FPP -NBR - 8133 or 1/2"x 14PP (NPT)
7. Standard or non toxic version
8. Filter:
 - * Plastic (removable)
9. Holder type: refer to Technical Specifications
10. Dimensions of the outlet : refer to Technical Specifications
11. Mounting position of the holder in relation to the water inlet (only for EVA 06, 07, 09, 12, 14 e 15 models)
12. Flow control
 - * 5 l/min
 - * 6,5 l/min
 - * 6,7 l/min
 - * 8 l/min
 - * 12 l/min
 - * 20 l/min
 - * Without flow control (Standard - 40 l/min@8kgf/cm²)
13. Application:
 - * operating pressure (kgf/cm²) and flow (l/min.)
 - * equipment in which it will be used
 - * liquid: please specify the maximum temperature and if it is not clean. Ex.: water with detritus, chemical products, etc.
 - * expected operating life: in cycles - test conditions
 - * temperature range the component will be submitted to
 - * specific working conditions
 - * test specifications
14. Estimated monthly usage
15. Quantity and delivery time of samples or estimated production date

EPR Series (Pressure Switches)

Technical Specifications - EPR models 00,02*

Materials:

Body: thermoplastic
 Membrane: rubber
 Terminals: brass

Mounting:

according to the model

Actuation range:

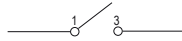
Calibration range (turn-on pressure):
 50 to 500 mmH O₂
 Minimum turn-off pressure: 20 mmH O₂
 Turn-on and turn-off pressure tolerance: (contact us)

Differential (turn-on to turn-off pressure) P:

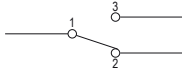
turn-on pressure in the range 50 to 200 mm H O - P = 30 mm H O (minimum)₂
 turn-on pressure in the range 200 to 500 mm H O - P = 50 mm H O (minimum)₂

Electrical function:

Normally Open (N.O.)



S.P.D.T



Contact rating (220 Vac - resistive load):

Turn-on pressure/ Contacts	1-3 (N.O.)	1-2 (N.C.)
50 to 100 mm H O ₂	4 A	1 A
> 100 mm H O ₂	10 A	1 A

Electrical life:

- > 25,000 operations;
- > 25,000 operations for SEMKO certification ;
- > 6,000 operations for UL certification .

Dielectric strength:

1,500 Vac - 1min.

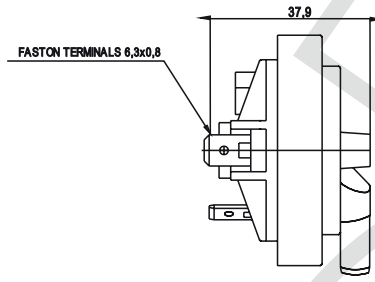
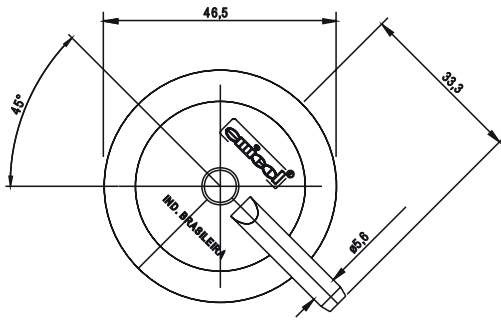
Connecting terminals:

Faston 6.3mm

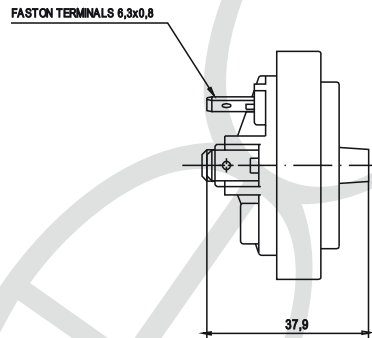
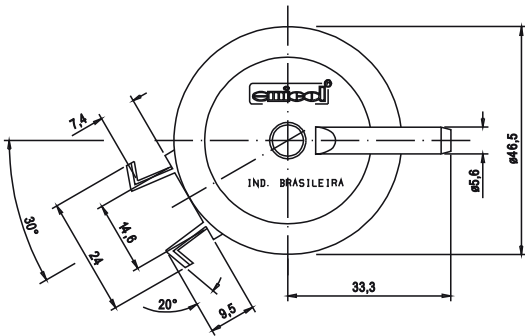
* Dimension mm

EPR Series

EPR 00 Model - Fixed Level Controller - type 0



EPR 02 Model - Fixed Level Controller - type 1



Catalog numbering sequence
(refer to check-list for samples and quotations)

EPR
Series

00
Model
(see drawings)
00
02

1
Electrical function
2...N.O.
3...Alternate action

330
Turn-On
pressure
(mm H₂O)

120
Turn-Off
pressure
(mm H₂O)

01
Holder
(see Technical
Specifications)
or
ZZ...without holder

EPR Series (Level Controller)

Technical Specifications - EPR 04, 05, 06, 07, 08 and 09 models

Materials:

Body: thermoplastic
Terminals: brass

Mounting:

According to the model

Actuation Range:

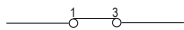
Calibration Range (turn-on pressure): 50 to 500 mmH O₂
Minimum turn-off pressure: 20 mmH Q
Turn-on and turn-off pressure tolerance: (contact us)

Electrical function:

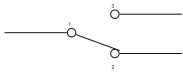
Normally Open (N.O.):



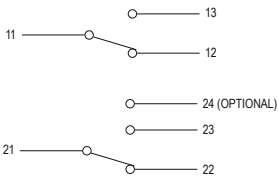
Normally Closed (N.C.):



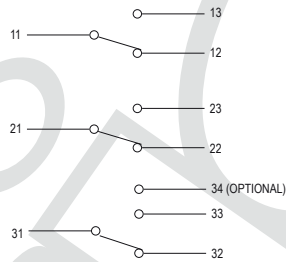
S.P.D.T.:



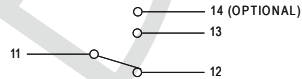
EPR 08:



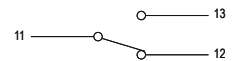
EPR 09:



FIXED:
EPR 04, EPR 05, EPR 07:



Ajustable:
EPR 06



Contacts capacity:

CERTIFICATION	SPECIATION
UL	12A, 125Vac (resistive) 10A, 250Vac (resistive) 1/2HP, 125/250 Vac 1A, 250Vca (resistive)* 3/4HP, 125/250 Vac
SEMKO	N.O.: 10A(resistive) 4A(indutive) N.C.: 04A(resistive) 1A, 250Vca (resistive)* 100mA, 5Vcc, 12Vcc, 24Vcc**

* Contacts against overflow
**Appliance in low current

Electrical Life:

> 25,000 operations
>25,000 operations for SEMKO certification
> 6,000 operations for UL certification

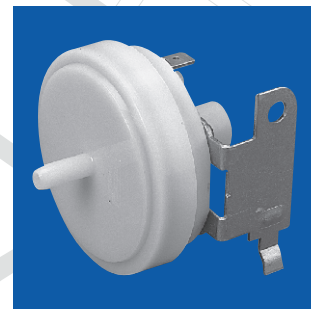
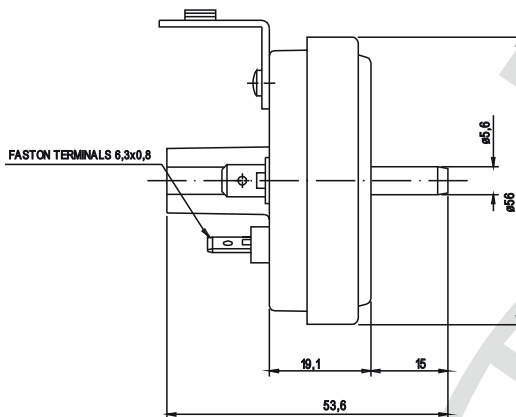
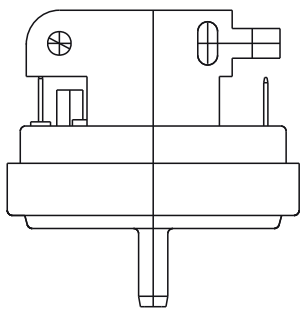
Type of Terminal:
Faston 6.3mm

*We give us the right to change specifications without prior notice. We also exempt from any responsibility by applications that not attend our specification and not approved by us. - Emicolet Eletro EI

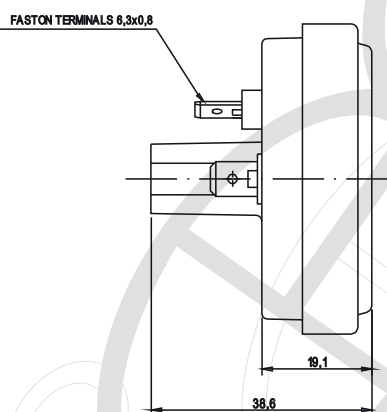
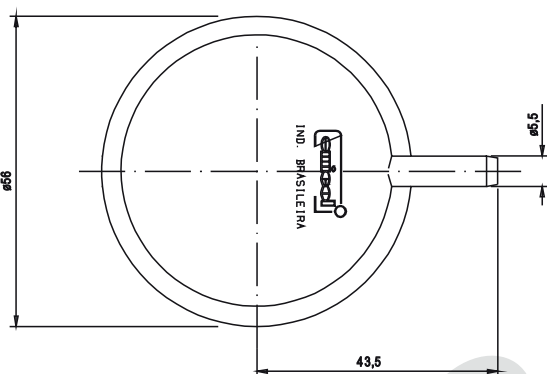
erbnica S.A.

EPR Series

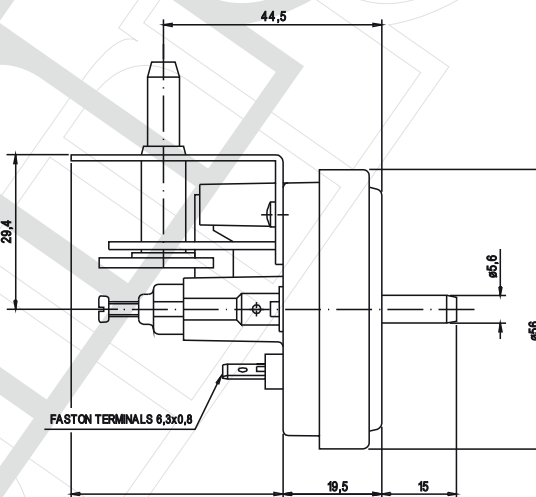
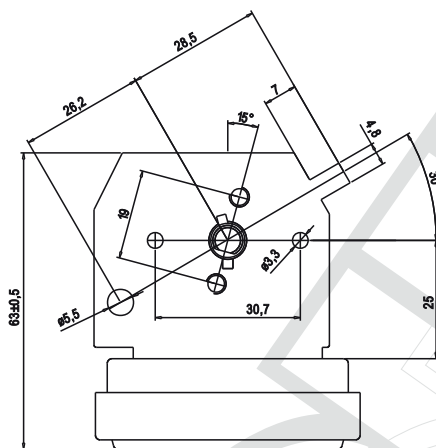
EPR 04 Model - Fixed Level Controller- Central Inlet (with or without holder).



EPR 05 Model - Fixed Level Controller- Lateral Inlet (with or without holder).



EPR 06 Model - Adjustable Level Controller (Central or Lateral Inlet).



Obs.: For other types of holder - please contact us and provide drawings

Catalog numbering sequence

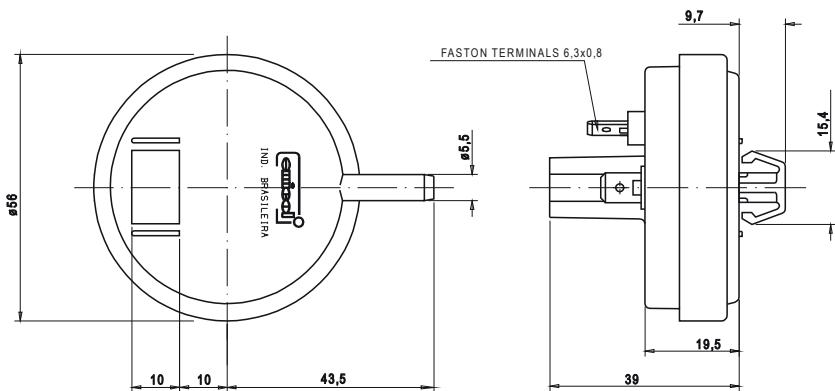
EPR	06	2	365	280	180	070	ZZ
Series	Model	Electrical Function High-Level 1...N.C. 2...N.O. 3...S.P.D.T.	Turn-on Pressure High-Level (mm H Q)	Turn-off Pressure High-Level (mm H Q)	Turn-off Pressure High Level (mm H Q)	Turn-on Pressure Low-Level (mm H Q)	Holder (See Technical Specifications) or ZZ...without holder

Obs.: Intermediate levels shall be defined by drawings or specifications.

EPR Series

EPR 07 Model - Fixed

Level Controller- lateral inlet with upper clamp

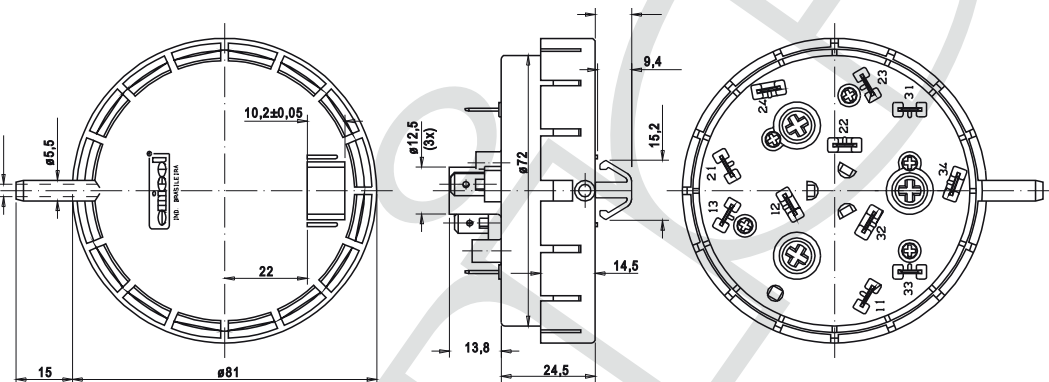


Catalog numbering sequence

EPR	07	2	330	120	380	ZZ
Series	Model 04 05 07	Electrical Function 1...N.C. 2...N.O. 3...S.P.D.T.	Turn-on Pressure (mm H Q)	Turn-off Pressure (mm H Q)	Overflow Pressure (mm H Q) Optional	Holder (See technical Specifications) ZZ...without applicable
					ZZ...not applicable	

EPR 08/09 Model - Fixed

Level Controller for 2 or 3 levels.



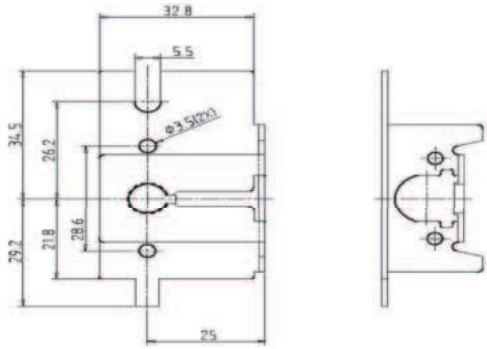
Catalog numbering sequence

EPR	08	2	365	280	400	1	180	070
Series	Model	Electrical Function High-level 1...N.C. 2...N.O. 3...S.P.D.T.	Turn-on Pressure High-level (mm H Q)	Turn-off Pressure High-level (mm H Q)	Overflow Pressure (mm H Q) Optional	Electrical Function Low-level 1... N.C. 2... N.O. 3... S.P.D.T.	Turn-on Pressure Low-level (mm H Q)	Turn-off Pressure Low-level (mm H Q)
					ZZ...not applicable			

EPR	09	2	365	280	400	1	250	100	1	180	070
Series	Model	Electrical Function High-level 1...N.C. 2...N.O. 3...S.P.D.T.	Turn-on Pressure High-level (mm H Q)	Turn-off Pressure High-level	Overflow Pressure (mm H Q) Optional	Electrical Function Mid-level 1... N.C. 2... N.O. 3... S.P.D.T.	Turn-on Pressure Mid-level (mm H Q)	Turn-off Pressure Mid-level (mm H Q)	Electrical Function Low-level 1... N.C. 2... N.O. 3... S.P.D.T.	Turn-on Pressure Low-level (mm H Q)	Turn-off Pressure Low-level (mm H Q)
					ZZ...not applicable						

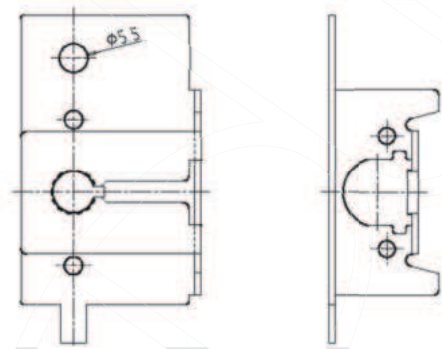
Support Model:

01 A - Metal support



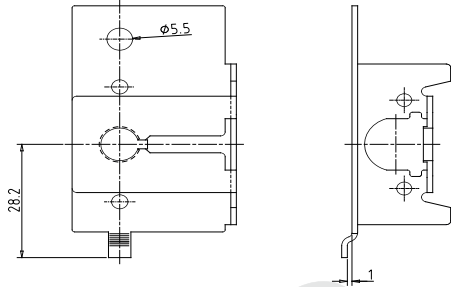
EPR 06

01 B - Metal support



EPR 06

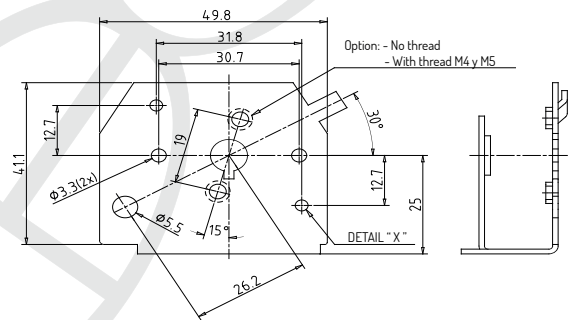
01 C - Metal support



EPR 06

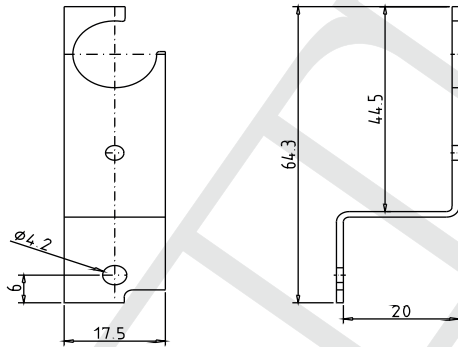
03 A | 03 B - Metal support

MODEL	DETAIL "X"
03-A	HOLE $\phi 2.8$
03-B	WITHOUT HOLE



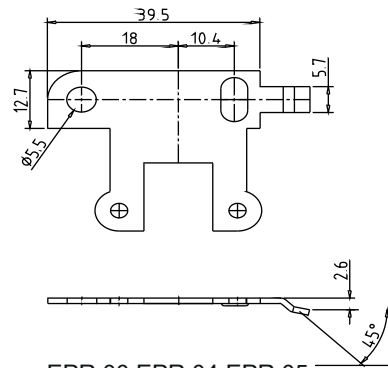
EPR 06

04 - Metal support



EPR 05

05 - Metal support



EPR 00, EPR 04, EPR 05

Check-list for samples and quotations

In order to assure the preparation of adequate samples and quotations to your application, please provide the following information:

1. Level Controller:

- * Fixed or Adjustable
- * Mechanical Mounting (Choose the most suitable model to your application)

2. Load:

- * Resistive: Voltage and current
- * Inductive: Voltage, current and power factor

3. Electrical Function : Normally Open, Normally Closed or Double Throw Contacts.

4. Fixed Level Controller (Model. EPR 00, 02, 04, 05, 07, 08 e 09):

- * Turn-on pressure (mmH₂O)
- * Turn-on pressure Tolerance(mmH₂O)
- * Turn-off pressure (mmH₂O)
- * Turn-off pressure Tolerance (mmH₂O)

5. Adjustable Level Controller (EPR 06 Model):

- * **Maximum Pressure:** Turn-on pressure (mmH₂O)
Turn-on pressure tolerance (mmH₂O)
Turn-on pressure tolerance (mmH₂O)
Turn-on pressure tolerance(mmH₂O)
- * **Minimum Pressure:** Turn-on pressure
Turn-on pressure tolerance (mmH₂O)
Turn-off pressure (mmH₂O)
Turn-off pressure tolerance (mmH₂O)

6. Application:

- * Equipment in which it will be used
- * Mounting positioning (horizontal / vertical)
- * For Adjustable Level Controller (mod EPR 06)
 - ** Provide the panel layout
 - ** Preferably provide the Knob

7. Estimate Monthly usage.

8. Quantity and delivery time of samples or estimated production date.

Nota: Wherever possible , provide the equipment in which the component will be used and the necessary specific test conditions.

EUS Series (Voltage Transformer)

Technical Specifications*

Materials:

Body : thermoplastic
 Seal: epoxy
 Terminals: nickel-plated steel
 tin plated

Maximum operating temperature :
 120 C

Manimum output voltage:
 11.500V

Maximum distance of the spark:
 4mm

Power Supply:
 Voltage: dual voltage: 127/220Vac
 Average consumption:

4HZ at 127Vca - 4mA
 at 220Vca - 10mA

10Hz at 127Vca - 4mA
14HZ at 220Vca - 10mA

Terminals:

Power Supply: Faston 6,3mm
 Output: Faston 6,3mm or 2,8mm

Electrical life:
 > 40.000 cycles

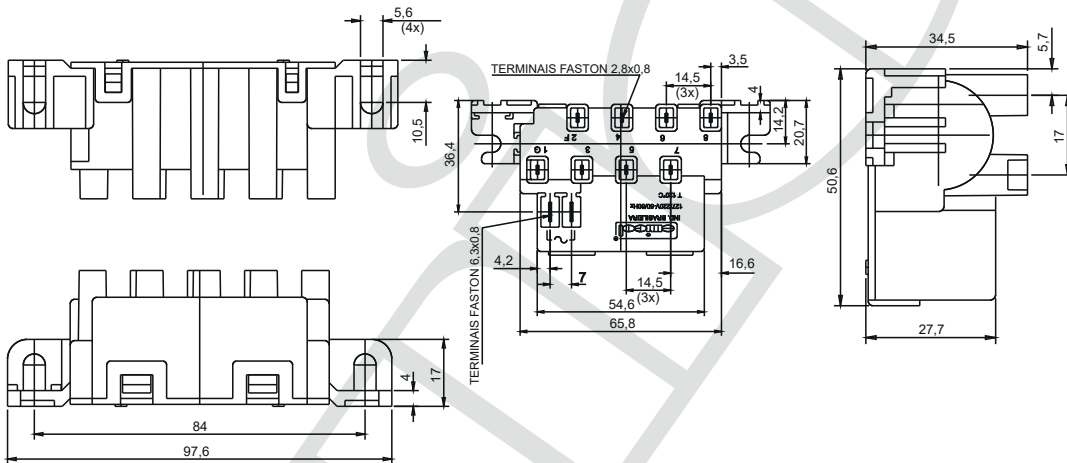
Dielectrical Strength:
 1.500Vac - 1 min.

Number of outputs:
 1 to 8

Technology:
 Electronic

*Dimensions in mm

EUS 03 model - Compact voltage transformer with quick - connects



Catalog numbering sequence

EUS

Series

03

Model

2

Number of Outputs

1 to 8

10

Output Frequency (Hz)

10Hz -127V

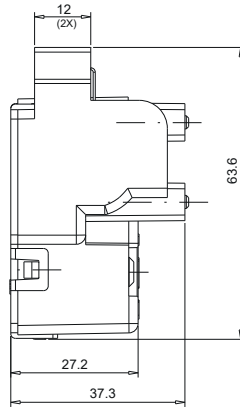
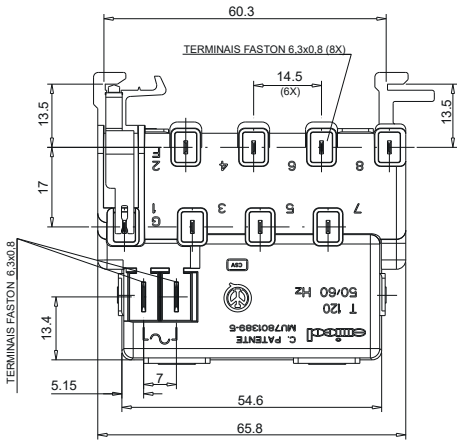
3

Output terminals

3... Faston 6,3mm
 8... Faston 2,8mm

EUS Series (Voltage Transformer)

EUS 05 model - Compact voltage transformer with quick - connects



Catalog numbering sequence

EUS

Series

03

Model

2

Number of Outputs
1 to 8

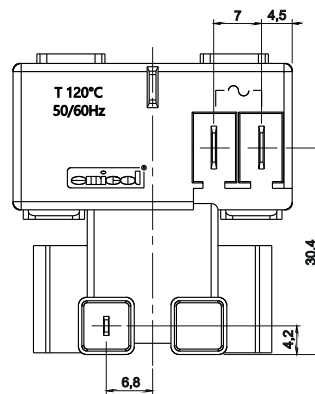
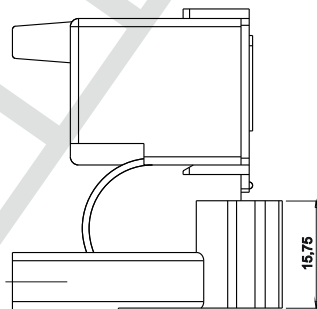
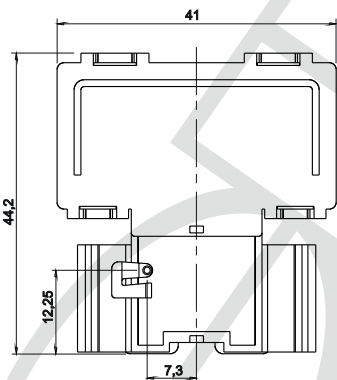
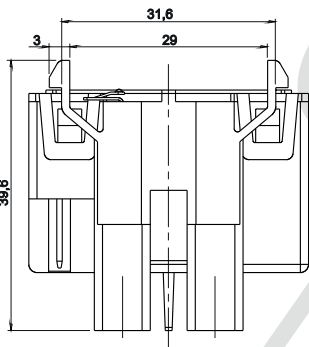
10

Output Frequency (Hz)
10Hz - 127V

3

Output terminals
3... Faston 6,3mm
8... Faston 2,8mm

EUS 06 model - Compact voltage transformer - 1 or 2 outlets



Catalog numbering sequence

EUS

Series

06

Model

1

Number of Outputs
1 or 2

8

Output Frequency (Hz)
10Hz - 127V

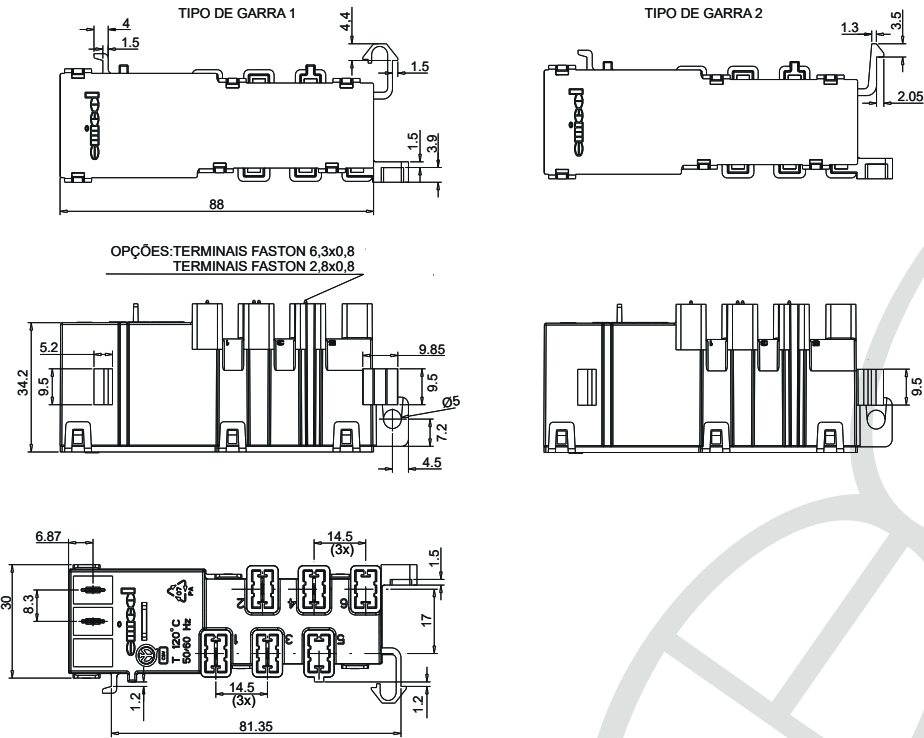
3

Output terminals
3... Faston 6,3mm
8... Faston 2,8mm

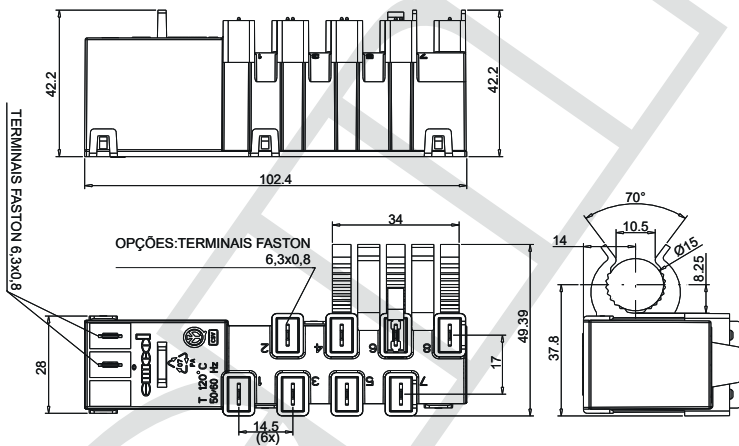
We give us the right to change specifications without prior notice. We also exempt from any responsibility by applications that not attend our specification and not approved by us. - Emico Eletro EI

EUS Series (Voltage Transformer)

EUS 09 model - Compact voltage transformer - 1 or 6 outlets



EUS 09 model - Compact Voltage transformer with fixation on gas pipe - 1 or 8 outlets



Catalog numbering sequence

EUS

Series

09

Model

2

Number of Outputs

1 or 8*

7 and 8 Outlets for pipe fixing only

10

Output Frequency (Hz)

10Hz - 127V

3

Output terminals

3... Faston 6,3mm
8... Faston 2,8mm

*We give us the right to change specifications without prior notice. We also exempt from any responsibility by applications that not attend our specification and not approved by us. - Emicel Eletro EI

ECR Series (Rotary switches)

TECHNICAL SPECIFICATIONS*

Materials:

Body: phenolic (ECR 02 model)
thermoplastic (ECR 03 model)
Shaft: thermoplastic
Cap: zinc-plated steel (ECR 02 model)
thermoplastic (ECR 03 model)
Terminals: brass/copper
silver-plated brass
silver-plated copper

Markings:

according to customer's specifications

Mounting:

Two screws (Nr 8 - 32 UNC) (ECR 02 model)
Central thread (3/8" UNF) with nut (optional) (ECR 02 model)
Self-Drilling screws \varnothing 3.5 mm (ECR 03 model)

Dimensions of the body:

ECR 02: L = 51.4 mm; W = 42.0 mm; H = 24.6 mm
ECR 03: L = 36.4 mm; W = 22.0 mm; H = 17.5 mm

Numbers of positions:

2 to 8 (ECR 02 model)
2 to 4 (ECR 03 model)

Electrical function:

according to customer's specifications

Contact rating:

up to 25 A (240 Vac - resistive load) (ECR 02 model)
up to 16 A (220 Vac - resistive load) (ECR 03 model)

Electrical life:

> 6,000 operations (ECR 02 model)
> 20,000 operations (ECR 03 model)

Dielectrical strength:

1,500 Vac - 1 min.

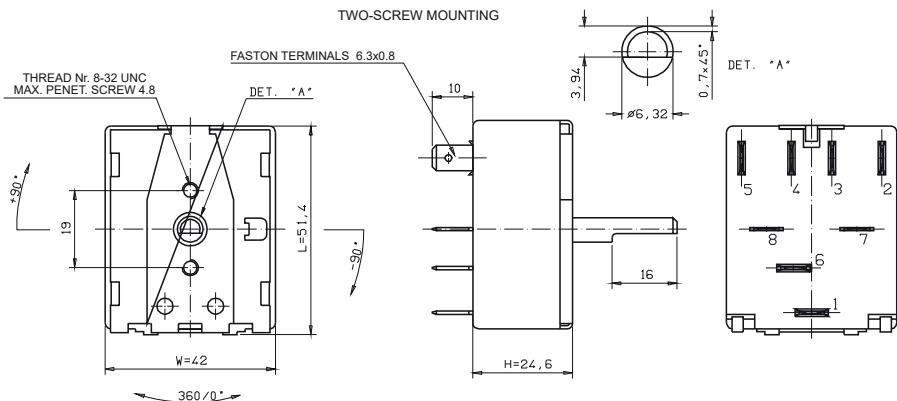
Type of terminal:

Faston 6.3 mm

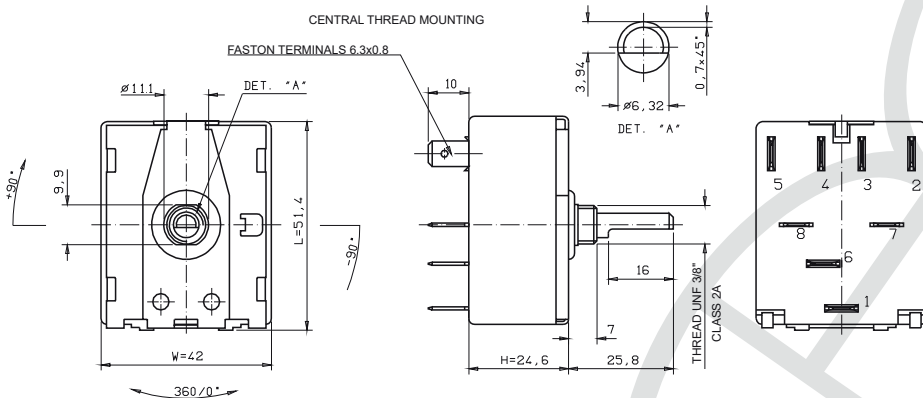
*We give us the right to change specifications without prior notice. We also exempt from any responsibility by applications that not attend our specification and not approved by us. Emicol Eletro Eletrônica S.A.

ECR Series (Rotary switches)

ECR 02 Model - Small-size Rotary switch (L = 51.4 mm; W = 42.0 mm; H = 24.6 mm)

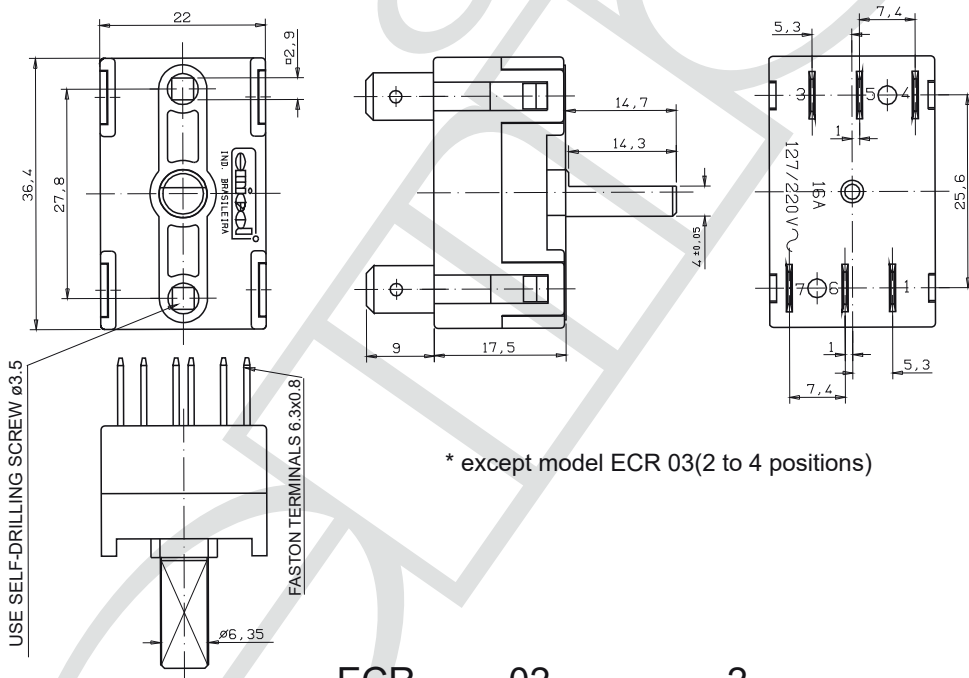


EMCOIL



EMCOIL

ECR 03 Model - Mini Rotary switch (L = 36.4 mm; W = 22.0 mm; H = 17.5 mm)



EMCOIL

* except model ECR 03(2 to 4 positions)

ECR

02

2

1

Series

Model
02
03

Positions
2 to 8*

(Refer to Technical Specifications)

Mounting

- 1...two screws (ECR 02)
- 2...Self - Drilling screws (ECR 03)
- 3...central thread with nut (ECR 02)

(Refer to Technical Specification)

*We give us the right to change specifications without prior notice. We also exempt from any responsibility by applications that not attend our specification and not approved by us. Emicol Eletro Eletrônica S.A.

ECR Series

Electrical functions of some already designed switches

Small-size rotary switch (ECR 02 model)

2 positions switch - Application: electric oven

Internal Connection		7 - 2	7 - 3	7 - 4	7 - 5
Pos.	Angle				
1	0°				
1	+90°	▼			

4 positions switch - Application: electric oven

Internal Connection		7 - 2	7 - 3/4	8 - 3/4	8 - 5
Pos.	Angle				
1	0°				
2	+90°	▼		▼	▼
3	+180°	▼			▼
4	+270°		▼		▼

5 positions switch - Application: fan with heater

Internal Connection		1 - 5	1 - 4	1 - 3	1 - 2	3 - 7
Pos.	Angle					
1	0°					
2	+45°	▼				
3	+90°		▼			
4	+135°			▼		
5	+180°				▼	▼

5 positions switch - Application: air conditioner

Internal Connection		1/6 - 2	1/6 - 3	1/6 - 5
Pos.	Angle			
1	+72°	▼		
2	144°		▼	
3	+216°	▼		▼
4	+288°		▼	▼
5	0°			

▼ - open contacts

□ - closed contacts

3 positions switch - Application: washer

Internal Connection		1 - 5	1 - 4	1 - 3
Pos.	Angle			
1	-45°	▼		
2	0°		▼	
3	+45°			▼

5 positions switch - Application: air conditioner

Internal Connection		1 - 5	1 - 3	1 - 2
Pos.	Angle			
1	360/0°	▼	▼	
2	+72°		▼	▼
3	+144°			▼
4	+216°	▼		
5	+288°			

5 positions switch - Application: air conditioner

Internal Connection		1 - 2	3 - 4	3 - 5	6 - 7
Pos.	Angle				
1	+144°	▼			
2	+72°	▼	▼		▼
3	0°	▼	▼	▼	▼
4	-72°	▼	▼	▼	▼
5	-144°				▼

7 positions switch - Application: air conditioner

Internal Connection		1 - 5	1 - 4	1 - 3	1 - 2
Pos.	Angle				
1	360/0°	▼			
2	+51°				▼
3	+103°	▼		▼	
4	+154°			▼	▼
5	+206°	▼	▼		
6	+257°		▼		▼
7	+308°				

Check-list for samples and quotations

In order to assure the preparation of adequate samples and quotations to your application, please provide the following information:

1. Dimensions of body:

- * Small-size rotary switch: L = 51.4 mm; W = 42.0 mm; H = 24.6 mm (ECR 02 model)
- * Mini rotary switch: L = 36.4 mm; W = 22.0 mm; H = 17.5 mm (ECR 03 model)

2. Mounting: central threads (3/8" UNF) with screw of fix (optional) (ECR 01 and ECR 02 Models) Two screw (Nr 8 - 32 UNC) (ECR 01 and ECR 02 Models) Two screw self-drilling \varnothing 3.5 mm (ECR 03 Model)

3. Load:

- * resistive: voltage and current
- * inductive: voltage, current and power factor

4. Application:

- * equipment in which it will be used
- * number of positions and geometric disposition (please provide panel's lay-out)
- * design and dimensions of the shaft (preferably provide the knob)
- * electrical function (internal connections in function of the position and the geometrical angle)
- * expected operating life: in cycles and test conditions
- * temperature range in which the component will be submitted to
- * specific working conditions
- * test specifications

5. Estimated monthly usage

6. Quantity and delivery time of samples or estimated production date

Note: Whenever possible, provide the equipment in which the component will be used and the necessary specific test conditions.

EMC Series (Motorized Contact Encoder)

Technical Specifications*

Materials:

Body and cam: thermoplastic

Terminals: Brass

Engravings:

According to the customer specifications

Motor Voltage : 240V - 50/60Hz
127V - 60Hz

Internal contacts supply: 24vdc / 50mA

Terminal type: Faston 2,8 mm

Terminal plating treatment: golden

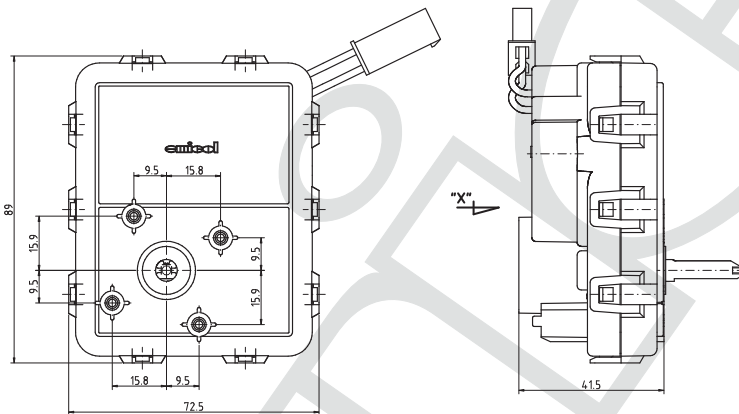
Operating temperature: 0 to 70°C

Operating Life: 5.000 cycles

Selectable positions: 16

Dimensions in mm.

EMC - Motorized Contact Encoder



EMC
Series

Motor Voltage
240 V - 50/60Hz
127 V - 60Hz

EMO Series (Optical Motorized Encoder)

Technical Specification*

Materials:

Body and cam: thermoplastic

Terminals: Brass

Engravings:

According to the customer's specification

Maximum voltage / Current power supply: 12V / 60mA

Terminal for connector: AMP 6 ways #171822-6, or equivalent

Terminal treatment: Tin plated

Operating Life: 100.000 cycles

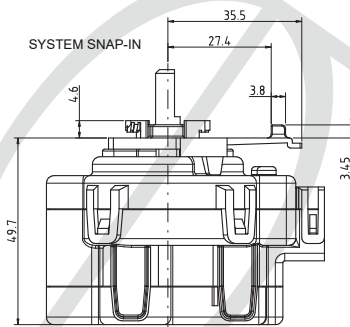
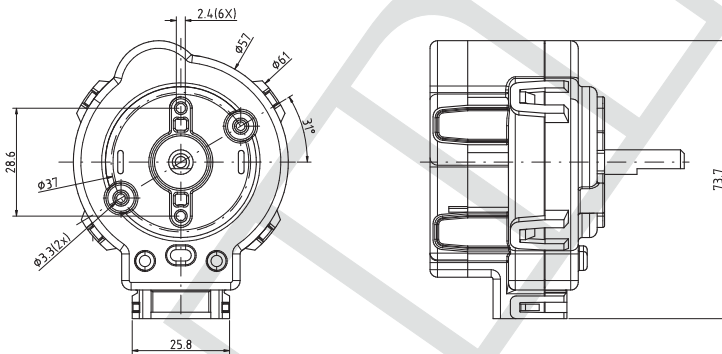
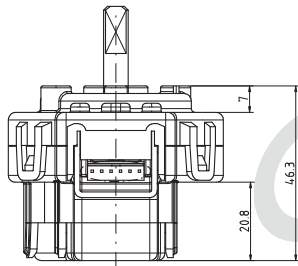
Features:

Optical encoder system, operates either clockwise or counter-clockwise.

Selectable positions: 16

Dimensions in mm.

EMO - Optical Motorized Encoder



EEC Series (Static Contact Encoder)

Technical Specification*

Body : thermoplastic

Engravings: according to the customer's specification

Dielectric Strength: Minimum 100Vac

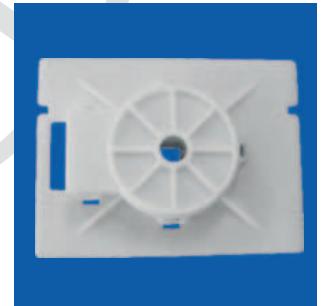
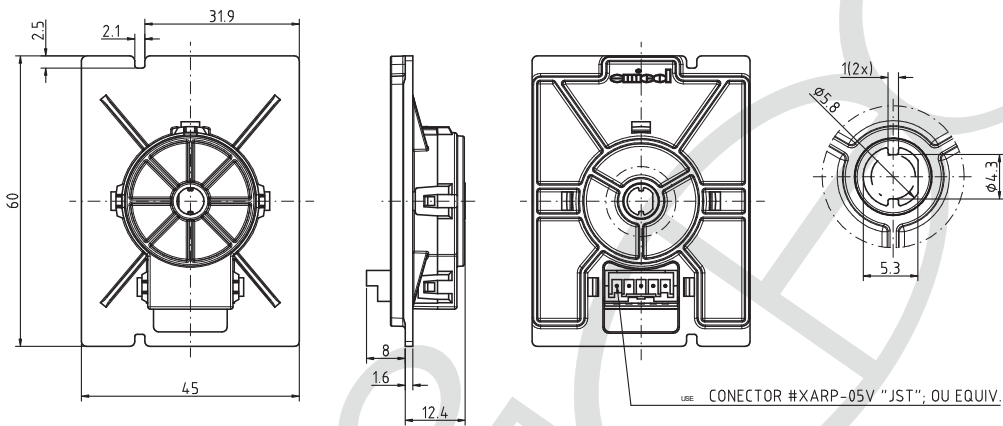
Torque axial: 0,07 à 0,11 N.m

Current Power Supply: 5Vdc/1mA

Operating Life: 15000 cycles (7500 cycles in each direction of rotation)

Dimensions in mm.

EEC - Static Contact Encoder



ETM Series (Electromechanical Timers)

TECHNICAL SPECIFICATIONS*

Materials:

Body: thermoplastic
Shaft: thermoplastic
Terminais: Brass
Bronze

Operating temperature range:

- 10°C to + 85°C

Mounting:

In the panel, by two screws W 5/32" x 1/4" or M 4 x 6 mm

Timing:

Standard models: 1 minute, 15 minutes 30 minutes, 1 hour, 2 hours and 9 hours.
Other timing - upon request.

Rotation:

Clockwise or counterclockwise

Electrical function and timing diagram:

Many possibilities - please provide drawings

Supply:

127 Vac - 60 Hz; 220 Vac - 60 or 50 Hz

Contacts:

Up to 3 contacts (ETM 01) -2 Normally Open (N.O.)
1 Normally Closed (N.C.)
Up to 6 contacts (ETM 02) -4 Normally Open (N.O.)
2 Normally Closed (N.C.)

Contact rating (220 Vac - resistive load):

N.O. contacts - 16 A
N.C. contacts - 1 A

Electrical life:

> 25,000 operations

Dielectric Strength:

1,500 Vac - 1 min.

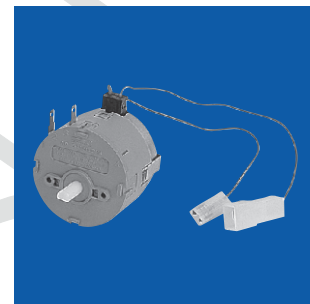
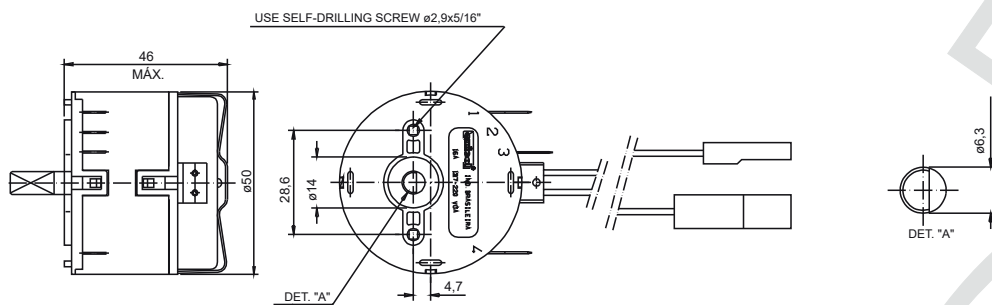
Type of terminal:

Faston 4.8 mm x 0.5 mm

* Dimensions em mm

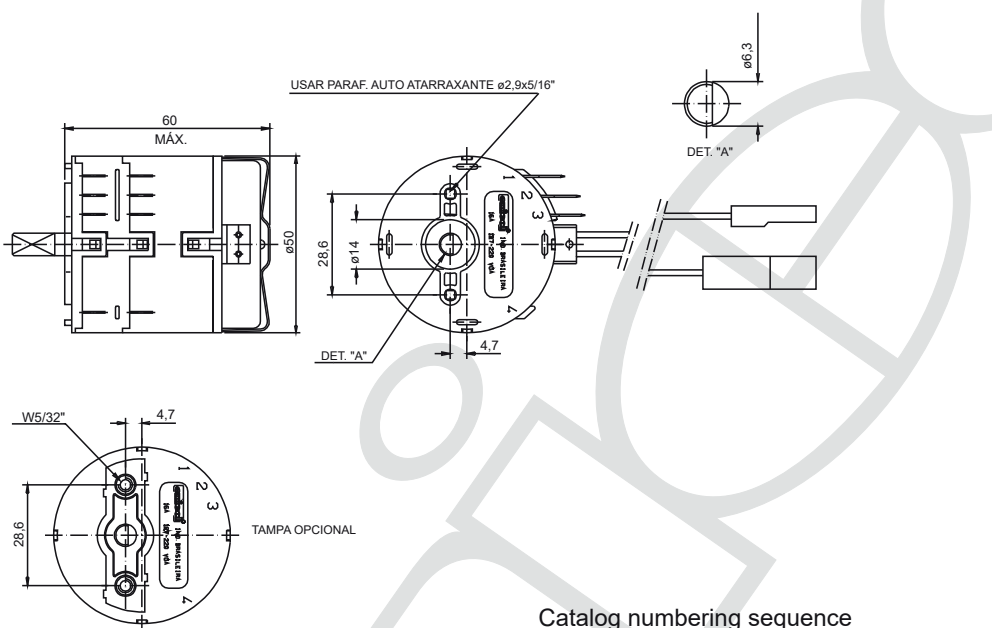
ETM Series

ETM 01 Model - Electromechanical timer



Ⓢ

ETM 02 Model - Double electromechanical timer



Ⓢ

Catalog numbering sequence

ETM	01	2	1	2
Series	Model 01...single 02...double	Timing 01...1 min. 02...15 min. 03...30 min. 04...1 h. 05...2 h. 06...9 h.	Voltage 1...127 Vac/60 Hz 2...220 Vac/50 Hz 3...220 Vac/60 Hz (Refer to Technical Specifications)	Rotation 1...clockwise 2...counterclockwise (Refer to Technical Specification)

Please provide drawings - according to the application and additional information required on the "Check-list for samples and quotations"

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Serie TLC

Materials: Body and cam: thermoplastic
Terminals: Brass

Engravings: according to the customer's specification

Operating temperature: 0 to 70 ° C

Timing: Upon Request

Direction of rotation: Hours

Schematic diagram and electric switching: Several possibilities including motor reversal, on request

Power: 127V-60HZ / 220V-60HZ / 220V-50HZ

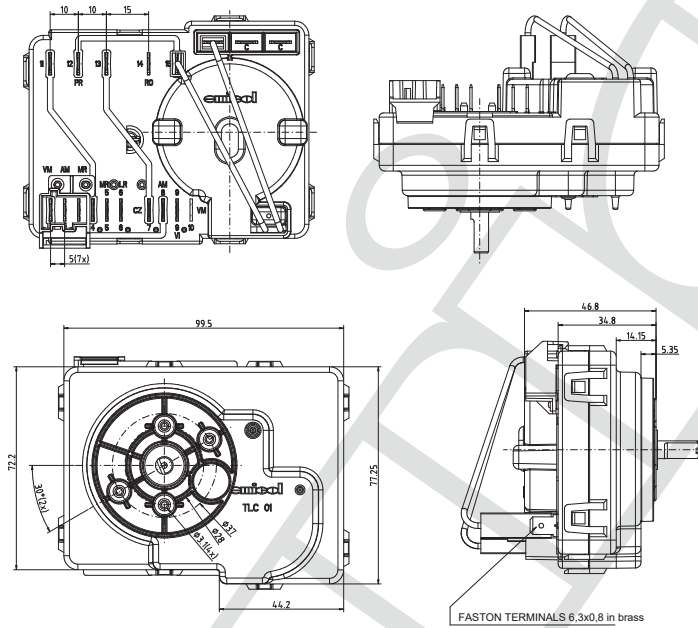
Shelf Life: 2,500 cycles

Dielectric strength: 1500VAC

Terminal Type: Faston 6.3 x0,8

Dimensions in mm

Mod. TLC - " 36 rotary switch positions "



Catalog numbering sequence

TLC
Serie

01
Model

1
Voltage

1...127 Vca/60 Hz
2...220 Vca/50 Hz
3...220 Vca/60 Hz

Check-list for samples and quotations

In order to assure the preparation of adequate samples and quotations to your application, please provide the following information:

1.Full scale timing and tolerance (standart timings: 1 minute, 15 minutes, 30 minutes, 1 hour, 2 hours and 9 hours, with tolerance of 5% in the whole scale) - provide the panel's lay-out.

2.Rotation: clockwise or counterclockwise

3.Supply: 127 Vac - 60 Hz; 220 Vac - 60 or 50 Hz

4.Contacts:

* electrical diagram of the N.O. and N.C. contacts

* load: resistive: voltage and current

inductive: voltage, current and power factor

5.Mounting:

* two screws W 5/32" x 1/4" or M 4 x 6 mm

6.Applications:

* equipment in which it will be used

* design and dimensions of the shaft (preferably provide the knob)

* drawing of the supply cable

* timing diagram of the contacts

* expected operating life: in cycles and test conditions

* temperature range the component will be submitted to

* specific working conditions

* test specifications

7.Estimated monthly usage

8.Quantity and delivery time of samples or estimated production date

Note: Whenever possible, provide the equipment in which the component will be used and the necessary specific test conditions.

ESL Series (Lamp Socket)

TECHNICAL SPECIFICATIONS*

Materials:

Body: thermoplastic with V0 material (ESL 01- optional item/ESL 02 - production item)

Contact bridge: phosphorous bridge

Terminals: brass

Rating:

2A - 250Vac

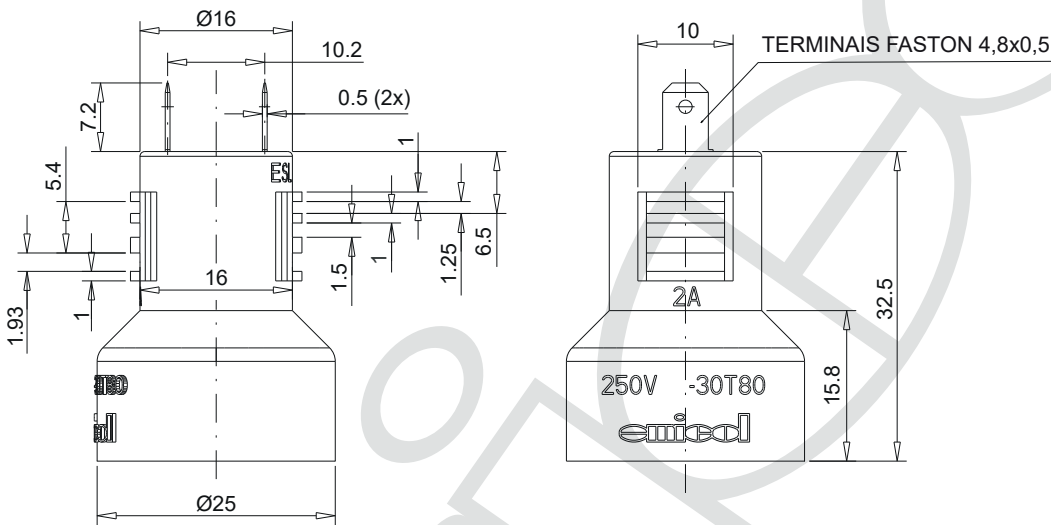
Lamp:

See below - product's description

*Dimensions in mm

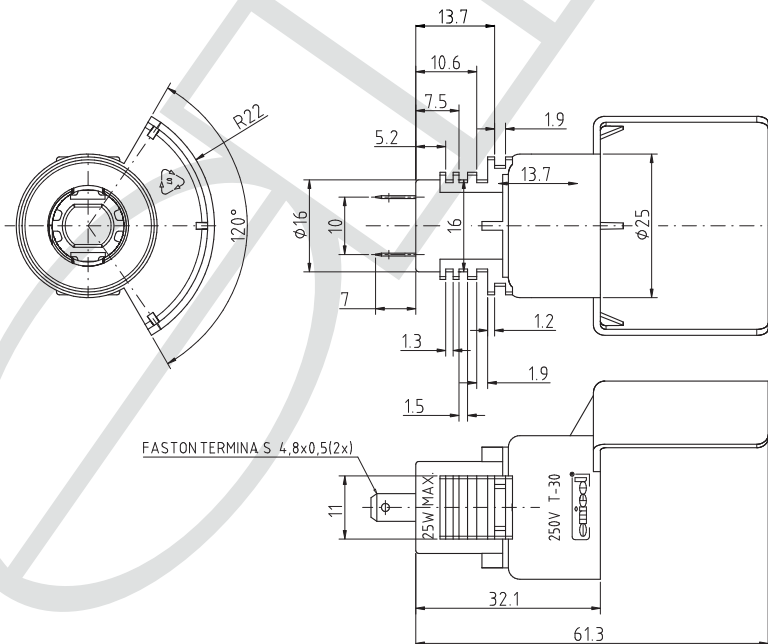
ESL 02 Model - Lamp Socket

Tubular (Mignon Type) - 9 threads per inch
 E14, E14/20, E14/23x15, E14/25x17 (EDSON)
 V0 Material (flame proof)
 Meets - IEC



ESL 03 - Lamp socket with diffuser

Tubular (Mignon Type) - 9 threads per inch
 E14 (EDSON)
 V0 Material (flame proof)
 Meets - IEC (without certificate)



Available series options

ESL
 Model
 0...No treatment

01
 Series
 01...for E14 Lamps
 02...various (check above) - Material V0
 03...for E14 Lamps*

MTE Series (Traction Module)

TECHNICAL SPECIFICATIONS*

Materials:

Base and cap: Reinforced thermoplastic
 Shaft: Poliacetol, Polyamide

Shaft course:
 up to 24 mm (max.)

Traction force:
 MTE 01: < 2.5 Kgf
 MTE 02: < 4.0 Kgf

Voltage:
 127 Vac - 60 Hz; 220 Vac - 50 and 60 Hz

Action time:
 6 sec. (for the 24 mm shaft course - 60Hz)
 ~ 7 sec. (in 50Hz)

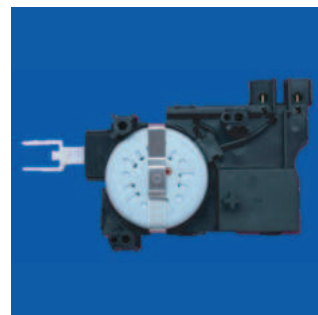
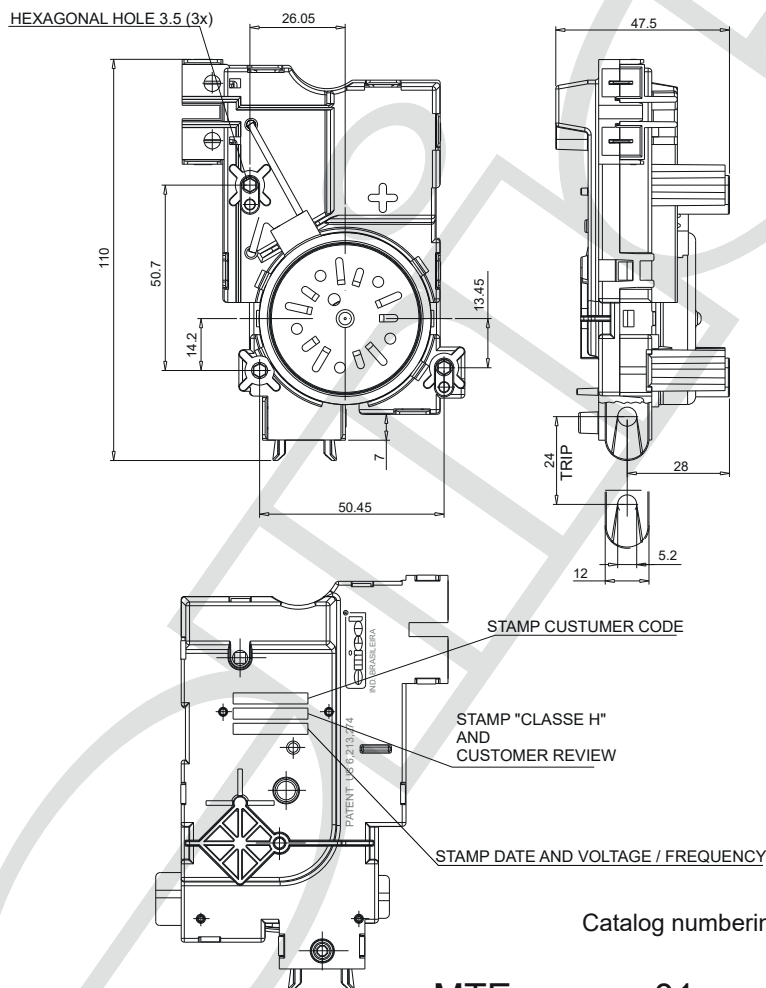
* Dimensions in mm

Connection type:
 Faston 6.3mm x 0.8mm(RAST 5)

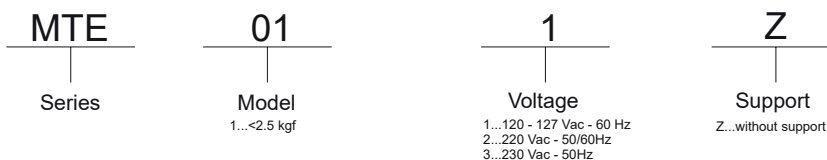
Fixation:
 by 3 screws type AA - 4.2mm

Operating life:
 > 30,000 operations

MTE 01 Model - Traction Module



Catalog numbering sequence



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EBE Series

Technical Specifications*

Materials:

Body: thermoplastic

Terminals:

Faston 6,3mm

Rast 5

Dielectric Strength:

1.500 Vac

Voltage:

110/120 Vca - 60 Hz (yellow cover)

220/240 Vca - 60 Hz (black cover)

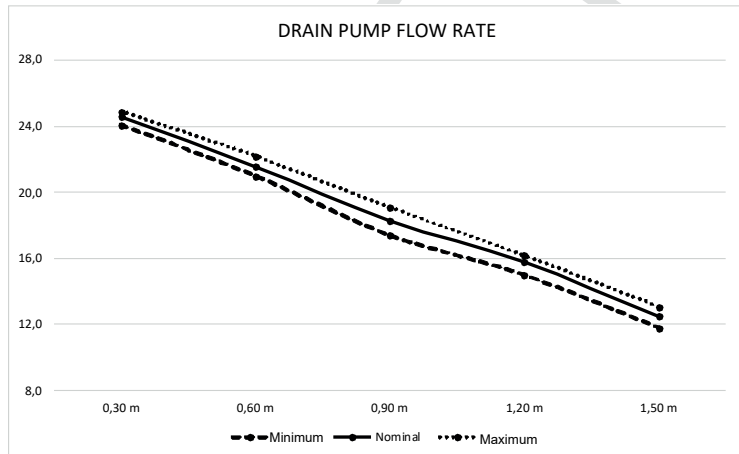
220/240 Vca - 50Hz (green or red cover)

Insulation class : H

Engraving: as per customer specification

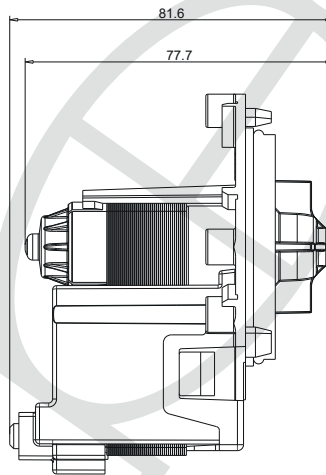
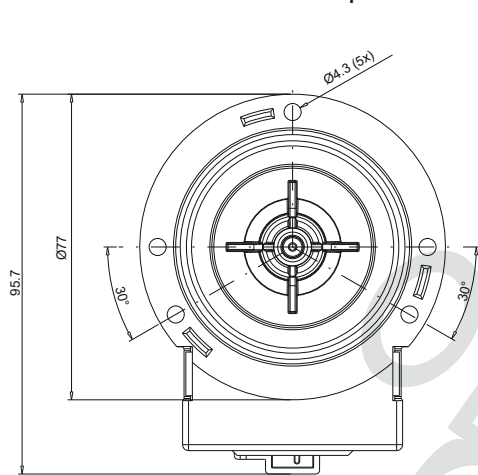
Table:

	0,3 m	0,6 m	0,9 m	1,2 m	1,5 m
Minimum	24,1	21,0	17,4	15,0	11,8
Nominal	24,6	21,6	18,3	15,8	12,5
Maximum	24,9	22,2	19,1	16,2	13,1

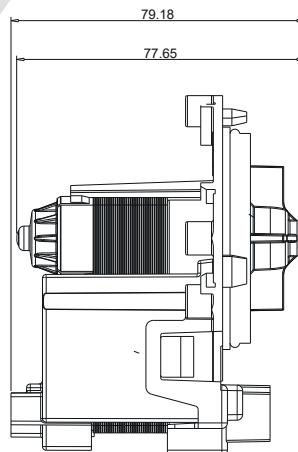
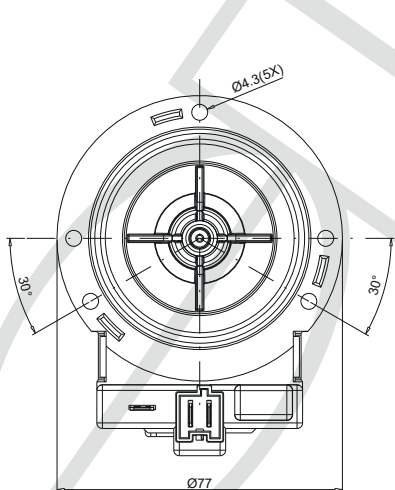


* Values in the table are for reference only and can be changed according to the technical specifications of each Drain Pump

EBE 04 Model - Drain Pump



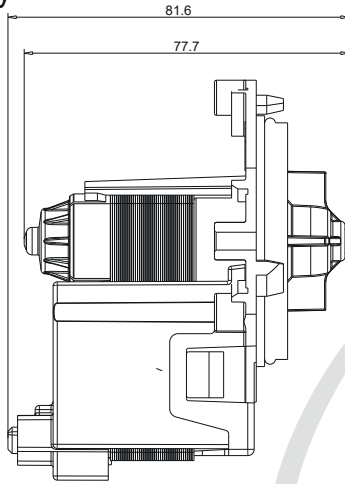
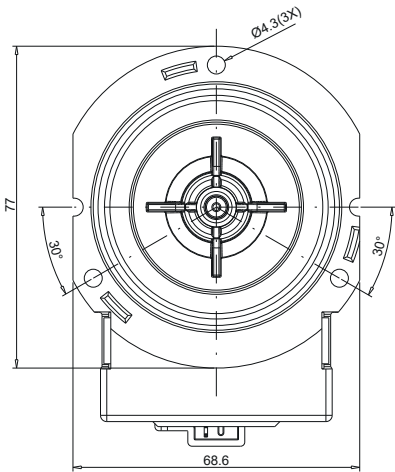
EBE 05 Model - Drain Pump with RAST 5 connector



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EBE Series

EBE 06 Model - Drain pump without body



Catalog Numbering Sequence

EBE

Series

01

Model

*01...
02...Rast 5
03...

1

Voltage

1...127Vac - 60Hz
2...220Vac - 50Hz*
3...220Vac - 60Hz

*Attend Certificate



1

Protection

1...with thermal protection
2...without thermal protection
3...by impedance (please contact us)

1

Body

1... body 1
2... body 2
3... body 3
4... body 4
5... body 5
6... body 6
7... body 7
Z... without body
(see drawings)

Z

Filter

1...with filter*
Z...without filter
(see drawings)

* (option available just for body model 2)

1

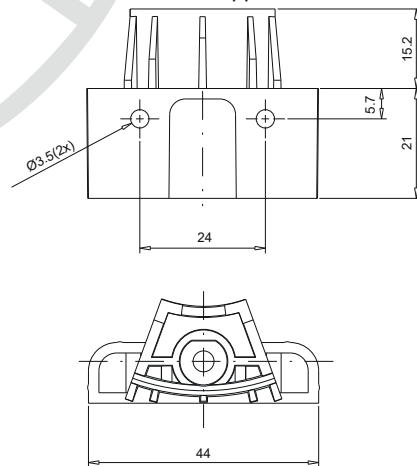
Support for Fixtion

1...support 1
2...support 2
3...support 3
Z...without support

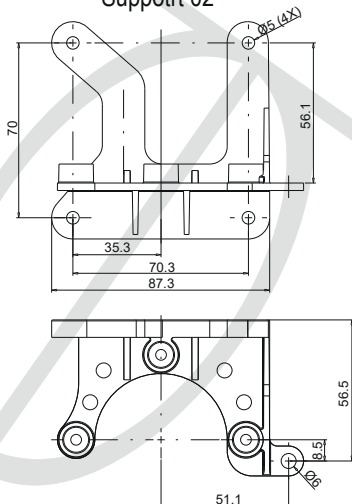
Types of support:



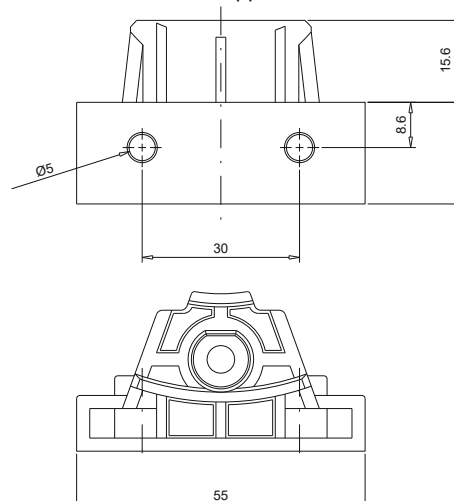
Support 01



Support 02



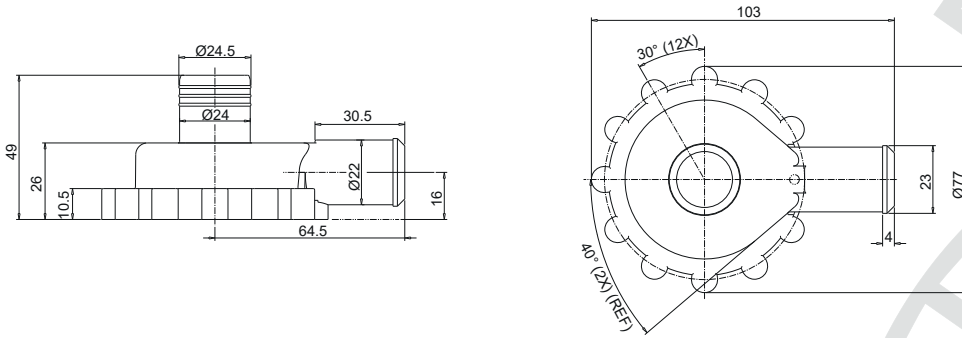
Support 03



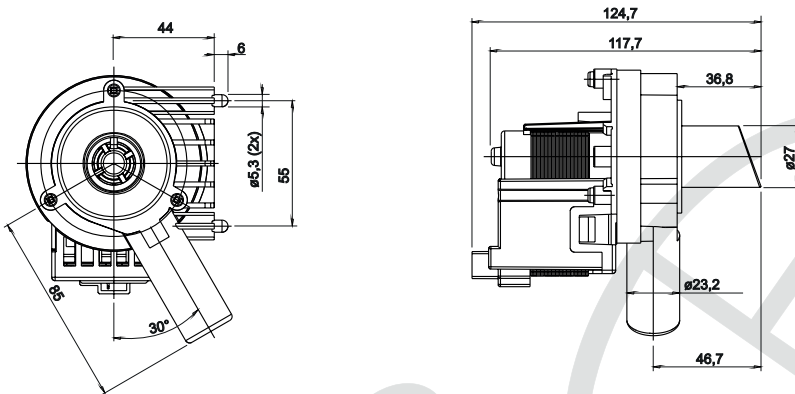
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EBE Series

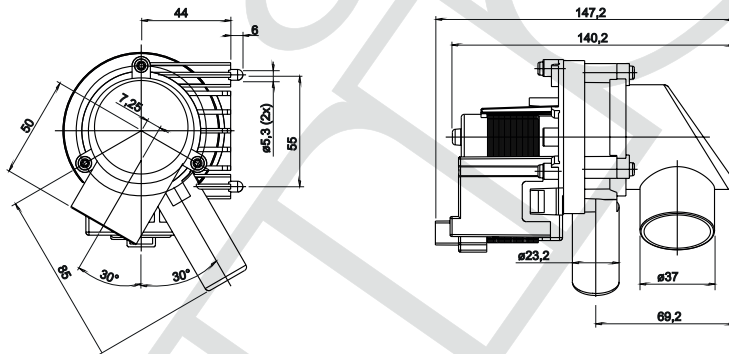
Body Model 1



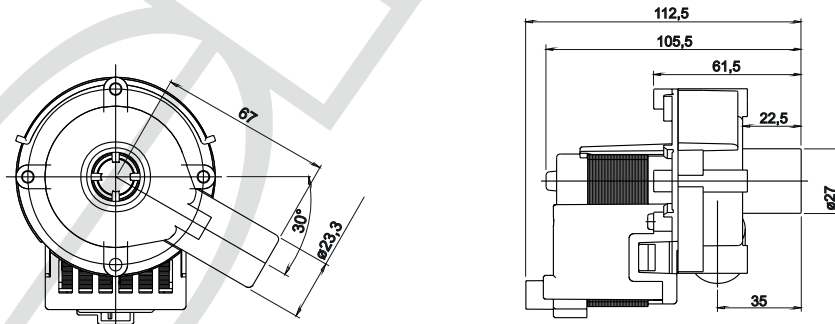
Body Model 2 - without filter



Body Model 2 - with filter



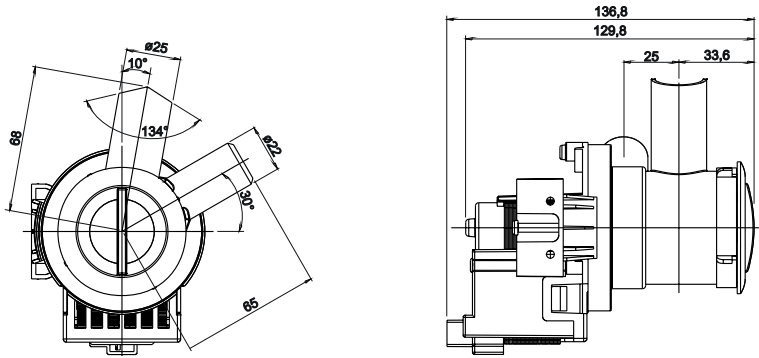
Body Model 3



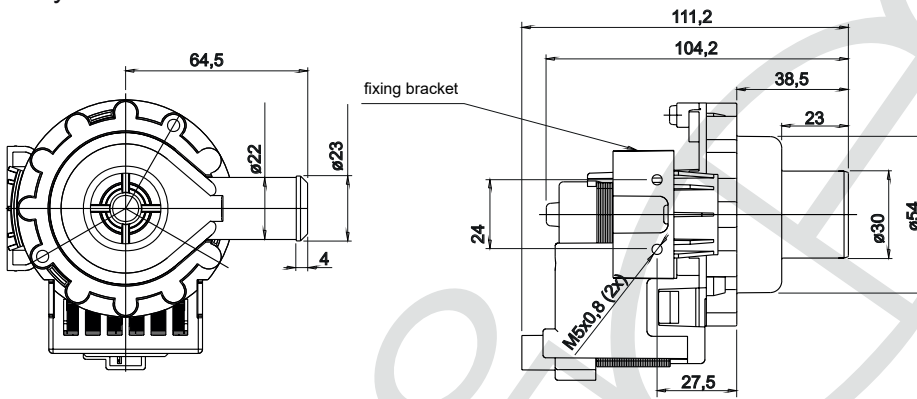
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EBE Series

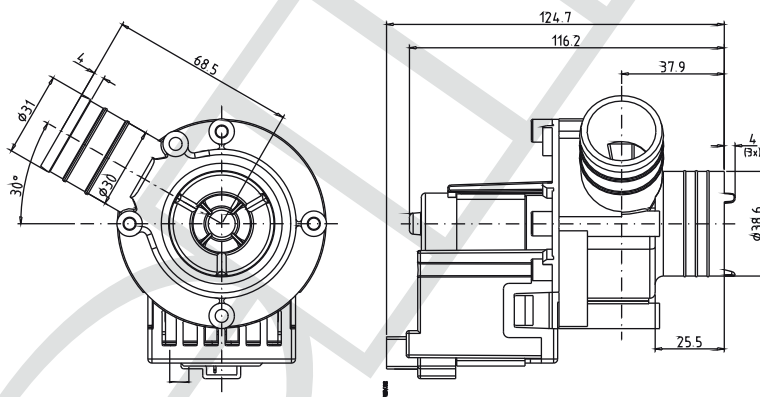
Body Model 4



Body Model 5



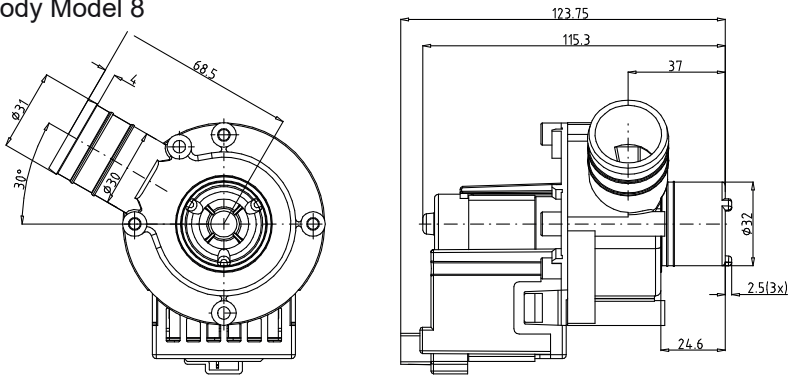
Body Model 7



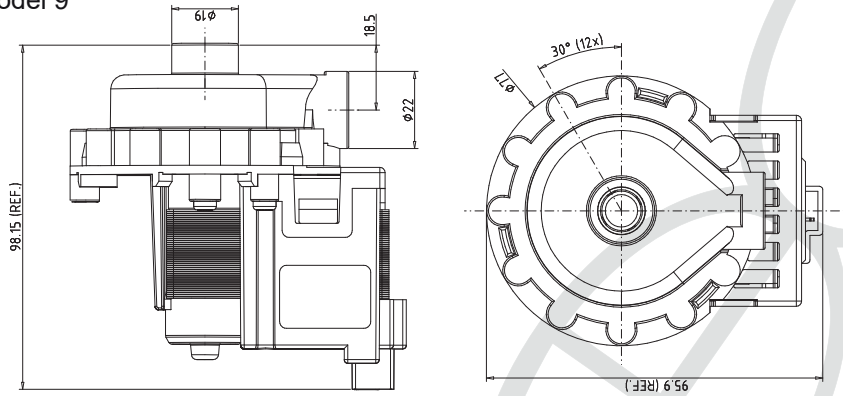
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Série EBE

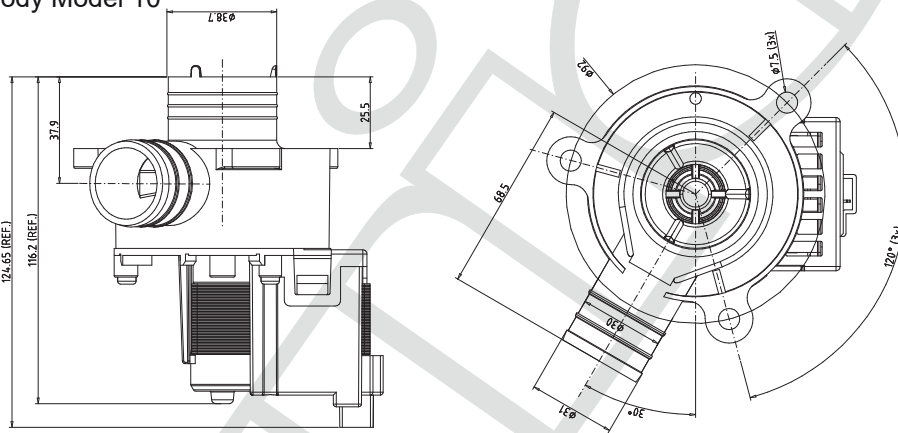
Body Model 8



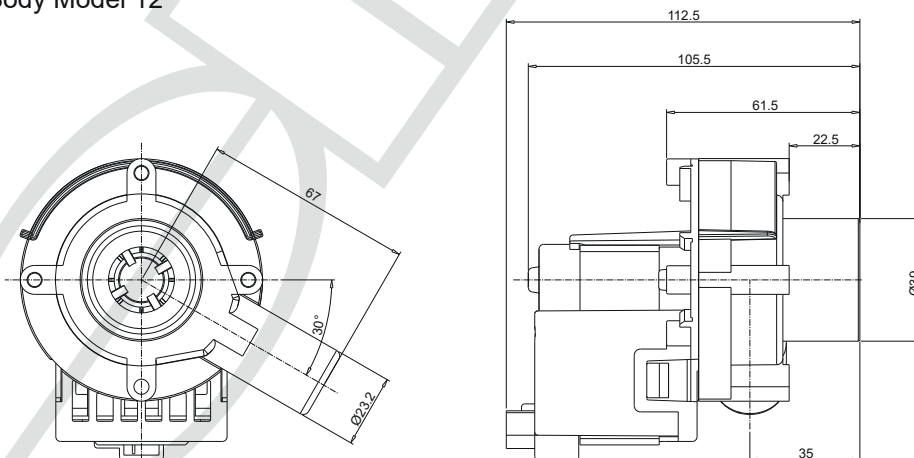
Body Model 9



Body Model 10



Body Model 12



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• P A R T S •

ORIGINAL PARTS MANUFACTURER

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