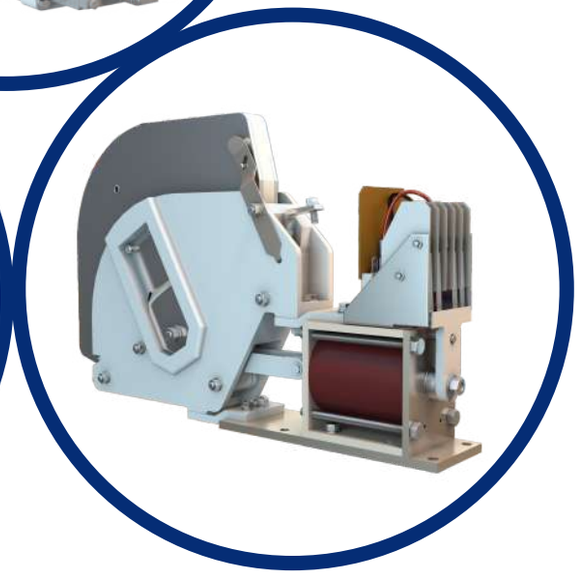
AC/DC POWER CONTACTORS

FOR

ROLLING STOCK AND INDUSTRY



PPS International Private Limited

(www.ppsinternational.in)

"Make In India"

IRIS™ Certified

ABOUT US

The vision of PPS International is "To manufacture Railway & Metro products" Indigenously with International specifications standards.

Our main objective is to manufacture/supply high tech equipments in India, which are not available in India or to do some value addition for ensuring safe and reliable journey of the passengers.

Our focus is to manufacture/supply components used in 3 phase technology propulsion equipment fitted rolling stock and infrastructure component used in 25 KV AC OHE traction or complete DC substations.

With consistent efforts, in introducing several cutting-edge technology oriented equipment in Indian Railways and Metros in last 15, years we have supplied several world class railway equipment.

We have setup our own state of the art manufacturing unit in Greater Noida, near Delhi- India, having more than 60,000 sq.ft area with all modern production facilities.

We started with only 2 Employees in 2003 and now grown to 150 in 2018.

Besides acquiring technology, our efforts continued to setup our own R&D to design & develop unique components with unique features.

Current Product Range

For Railways Infrastructure:-

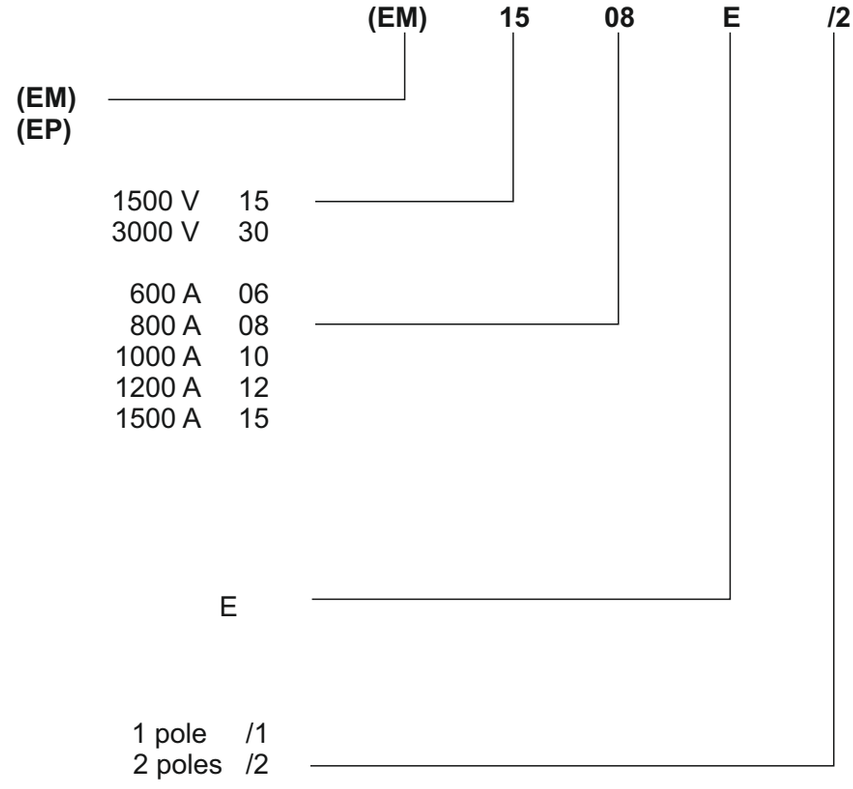
- OHE fittings — Own Manufacturing
- Aluminium cantilever — Own Manufacturing
- Current carrying droppers — Own Manufacturing
- PTFE Short Neutral Section Assembly — Arthur Flury, Switzerland
- Light Weight Section Insulator Assembly — Arthur Flury, Switzerland
- Spring ATD C+ — Pfisterer , UK
- DC Substation and Rectifiers — Pluton , Ukraine
- Load Break Switch, Motorised and Manual Isolators — Rauscher & Stoecklin Switzerland

Rolling Stock components:-

- Power Contactors up to 3000 Volt & 1500 Amp, both EM & EP type — Own Manufacturing
- Circular & Data Connector — Own Manufacturing
- Master Controller for 3 Phase Locomotives — Own Manufacturing
- AC Earthing Switch for Loco VCB — Own Manufacturing
- PA/PIS and CCTV Systems — Own Manufacturing
- Cable Harness for Locos, Metro Coach & EMU — Own Manufacturing

TYPE DESIGNATION

Type designation



Control Voltage for coil

The control voltage of the actuating mechanism is 110 V DC
The number of auxiliary contacts (e.g. 4)

1. General

These highly compact AC/DC contactors can be employed as polarity- independent circuit breaker in electric traction vehicles.

They are used in the main and auxiliary circuits as tapping contactors, load contactors, isolating contactors as well as for heating equipments.

These contactors have been specially designed for use under extreme harsh operating conditions encountered with electric traction vehicles.

The modular construction permits the implementation of multi-pole models. This type of contactor can also be used in heavy- duty equipment for the mining and steel industries.

2. Contactor types

The contactor type EM/EP are use with rated voltages between 1500 V and 3000 V and rated currents between 600 A and 1500 A. The base design of contactor is 1500 V & 600 Amp and there after the desired rated values can be selected as required by connecting the devices in series or parallel. Depending on the application, actuation of the moving contact can be done electropneumatically or elecromechanically.

3. Construction

All contactor models are of the same basic constructionand they are consist of the following mechanism.

Main Contact unit
Actuating mechanism
Arc chute
Auxiliary contacts
Housing

Main contact unit

The contact pair in the contact unit are spring mounted and upon actuation, it get closed with a special gliding movement which has a cleaning effect on the contact surfaces.

The contacts are fitted with a silver-tin oxide plating tips.

Actuating mechanism

Actuating mechanism for the moving contact can be either compressed air via an electropneumatic value or through a solenoid plunger together with an actuating lever.

Both the electropneumatic valve and the solenoid valve are designed for continuous duty.

Arc-chute

The acr-chute incorporates a De-ion copper grid which breaks the arc up into a serial of shorter arcs thus facilitating effective cooling. Additionally, two blow-out coils ensure rapid and reliable extinction of the arc.

With electro pneumatic actuation, the exhaust air from the cylinder is passed over the opening pair of contacts to assist the electro- magnetic blow-out.

Auxiliary contacts

The standard version has 4 auxiliary contacts which can be selected as normally open and / or normally closed.

If required , and depending on the contactor type, additional contact units can be added.

The auxiliary contacts are activated via cam plates which is fastened to the actuating shaft.

Housing

The housing is made of SMC material in line with the latest ecological findings. The material is non-flammable, non-toxic, environmentally-friendly and conforms to international standards for fire safty.

4. Installation

The contactor are installed with the arc chute facing upward. The thermal lift thus assists the effect of the electromagnetic blow-out.

If the contactors are mounted in blocks, it is possible to actuate up to 4 contactors using a single control valve and drive.

With electromagnetically actuated contactors, each must be fitted with its own solenoid.

In this type of block arrangement, all the contact actuating levers are mechanically connected to each other to ensure simultaneous, closing and opening.

The contactors can be mounted on insulator or on special mounting plates or on bus bars, depending upone the application and space

5. Control Circuit

Actuation

Rated voltage Un	12 V DC - 220 V DC
Operation Voltage	0.7 - 1.25 Un
Operating Pressure	0.4 - 1.0 Mpa

Auxiliary contacts

Rated Voltage	220 V DC
Rated current	20 A

6. Additional technical data

Operating temperature	-40 C to + 40 C (EM)
	-25 C to + 40 C (EP)

Switching frequency	max. 2 switchings per second

Mechanical life duration	$5x10^6$

Standard specification	IEC:60077
	IEC:60947-4-1
	IS:11731(Part I&II)

CONTACTORS WITH ELECTROPNEUMATIC ACTUATION

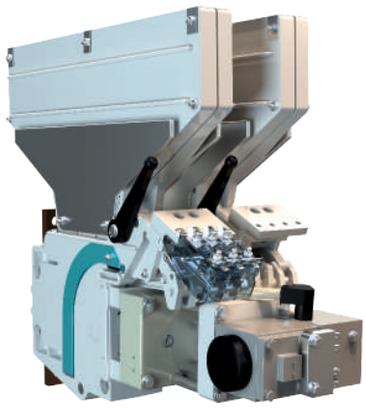
Main Technical Data

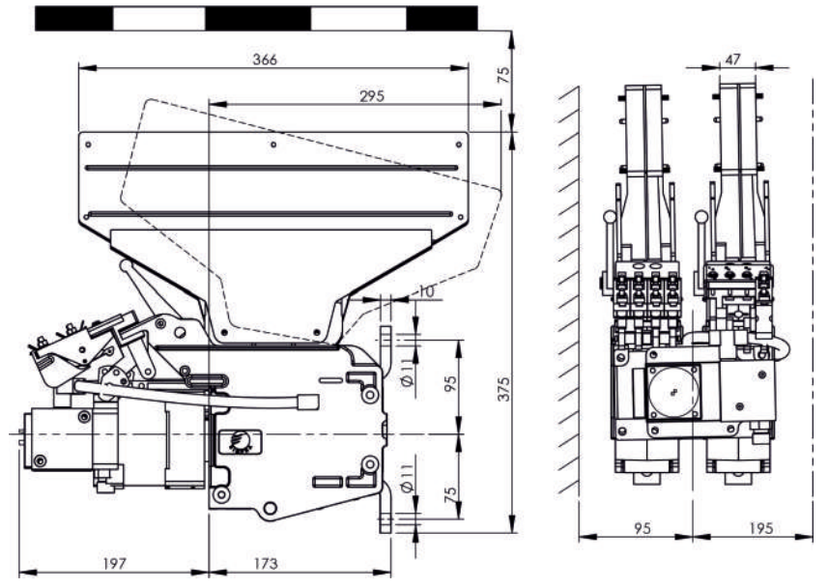
Type	DC Rated Voltage Un	Rated current** In	No. of Poles	Auxiliary contacts	Weight kg
30.06	3000 V	600 A	1	Up to 8	20.5
15.15c/2	1500 V	1500 A	2	Up to 8	35.5

* Maximum operating voltage: 1.2 Un
** Direct current and alternating current in the range 16 Hz to 60 Hz.

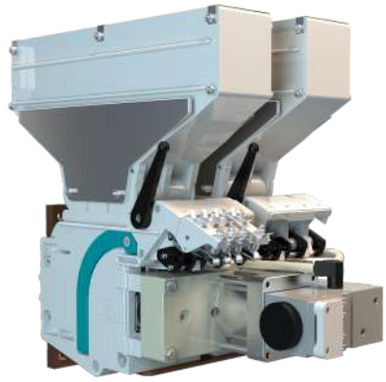
Main Dimension

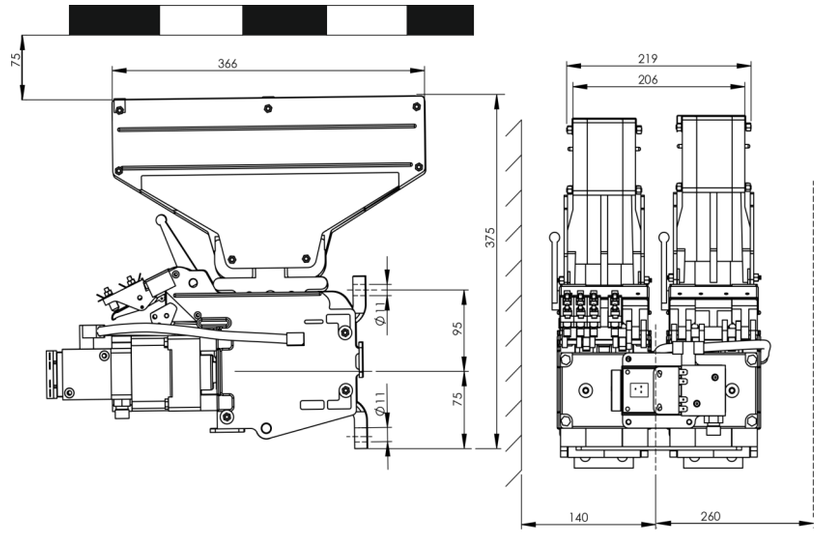
Type CONT-2-EP-30-06
3000 V & 600 A





Type CONT-2-EP-15-15
1500 V & 1500 A 2 pole





CONTACTORS WITH ELECTROMAGNETIC ACTUATION

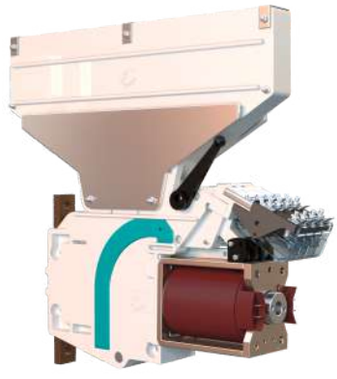
Main Technical Data

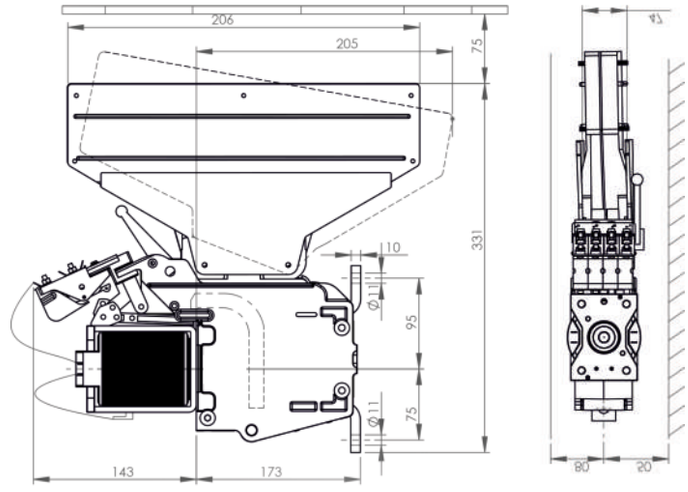
Model	DC Rated Voltage Un	Rated current** In	No.Poles	Auxiliary contacts 0 to	Weight kg
15.10	1500 V	1000 A	1	4	22.8
15.15	1500 V	1500 A	1	8	25.3

* Maximum operating voltage : 1.2 Un
** Alternating current with frequency in the range 16 2/3 Hz to 60Hz.
*** Other models on request

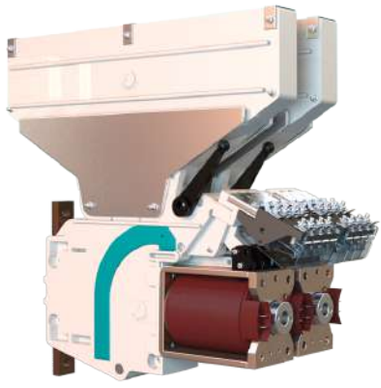
Main Dimension

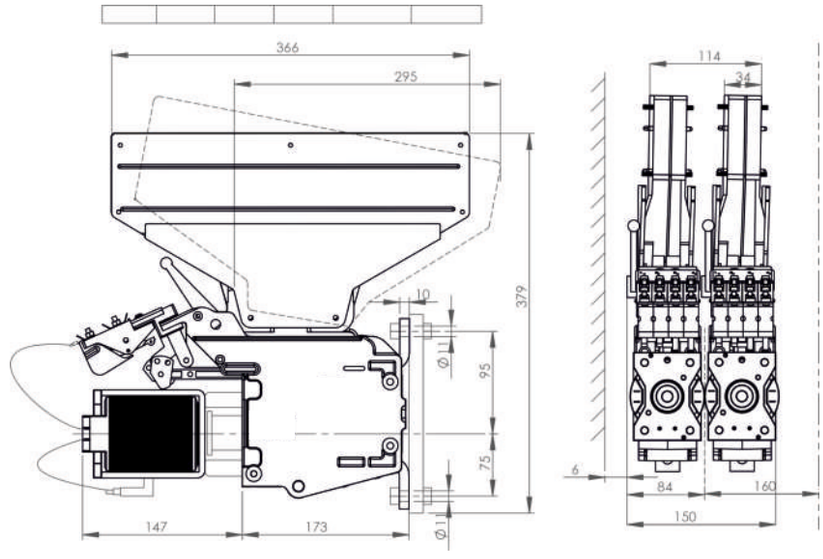
Type CONT-1-EM- 15-10 1500V & 1000A





Type CONT-2-EM- 15.15 1500V & 1500A





PRE- CHARGING CONTACTORS

Main Technical Data

General

Weight	Type SM: 6.1 kg
Mounting	Vertically on wall or scaffold
Ambient temperature	-40°C - +40°C
Switching frequency	max. 2 switch per second
Mechanical life duration	min. 5 x 10⁶ switchings
Standard specifications	IEC:60077 IEC:60947-4-1 IS:11731(Part I & II)

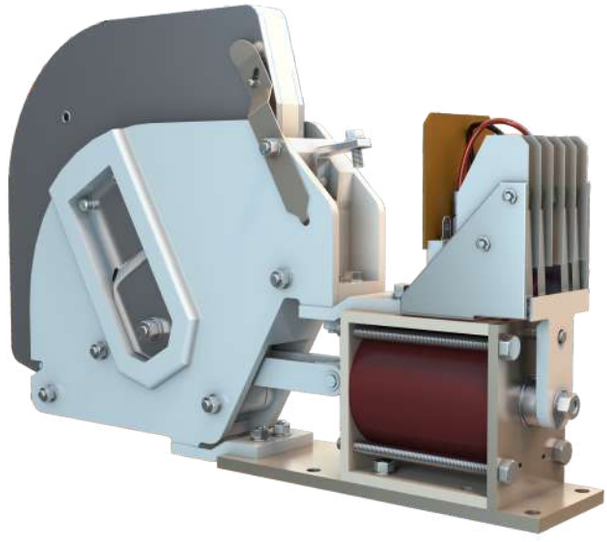
Main circuit

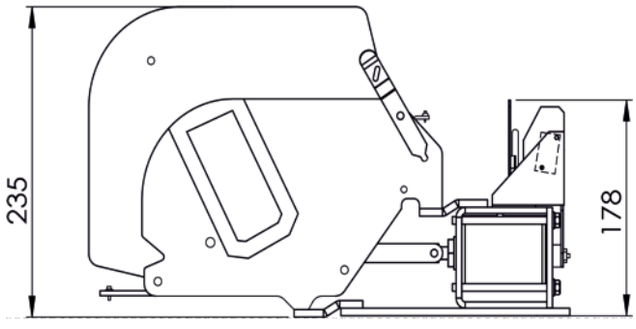
Number of poles,	1 normally
Nature of contact	open
Rated voltage	3000 V
Max. operating voltage	4500 V
Suitable supply	AC from 16⅔ / Hz up to 60Hz
Rated current	50 A
1 hour rated current	55 A
5 minutes rated current	75 A
Closing current limit	250 A
Interrupting current limit (ohmic)	
DC	4500 V 80 A 3600 V 100 A 1800 V 150 A
AC	3600 V 200 A
Closing time (U_n)	approx. 100ms

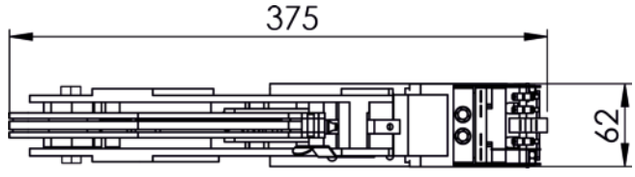
Contactor circuit

Actuation	
Construction	electromagnet with resetting spring
Rated voltage Un	12 V DC - 220 V DC
Operating voltage	0.7 - 1.25 Un
Power consumption at Un	approx, 20 W
Auxiliary contacts	
Number of poles, nature of contacts	4 N/O and/or N/C

Rated voltage		220 V DC
Rated current		6 A
Closing current max.		25 A
Interrupted current max.		
DC	48 V	1 A
	100 V	0.3 A
AC	220 V	3 A







UNIT-1 Corporate Office

UNIT-2 Factory

UNIT-3 Factory

PPS International Private Limited

www.ppsinternational.in

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