

POWERFLUX®  
MOBILE POWER FEEDS



*PF* Series

MULTIPLE LEADS  
SAFETY INSULATED  
CONDUCTOR RAIL  
SYSTEM

# INSULATED CONDUCTOR RAIL

**POWERFLUX**<sup>®</sup>  
MOBILE POWER FEEDS

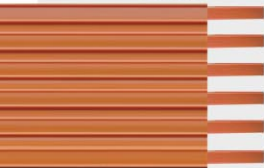
## 3 POLE



## 4 POLE



## 6 POLE



### 3 POLE CONDUCTOR

Part No.	Rating	Kg/m
PX3050	3P 600V 50A	0.73
PX3080	3P 600V 80A	0.85
PX3120	3P 600V 120A	1.20
PX3150	3P 600V 150A	1.38

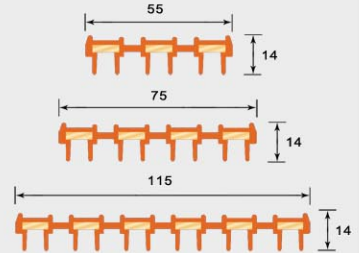
### 4 POLE CONDUCTOR

Part No.	Rating	Kg/m
PX4050	4P 600V 50A	0.89
PX4080	4P 600V 80A	1.07
PX4120	4P 600V 120A	1.50
PX4150	4P 600V 150A	1.75

### 6 POLE CONDUCTOR

Part No.	Rating	Kg/m
PX6050	6P 600V 50A	1.58
PX6080	6P 600V 80A	1.63

- \* Rating : 3P, 4P, 6P; 600V; 50A ~ 150A
- \* Conductor Material : OFC 99.99% fine copper
- \* Insulator : Rigid PVC (Heat Resistance 75°C) Orange (Hazard Color), Munsell 2.5YR6/13
- \* Installation Method : Tension type
- \* Available Length : Continuous up to 1000m
- \* Max. Radius Bending : 800mm
- \* Max. Conducting Speed : 300 m/min
- \* Suitable for vertical installations
- \* Indoor use only
- \* Cross Sections :



## ELECTRIFICATION PURPOSE

POWERFLUX safety power rails are electrical conductors of various profiles that are used to provide electrical potential to moving systems along a path of travel which have 3-6 poles power terminals.

POWERFLUX safety power rails are available or a current load from 50A up to 150A mobile electrification technology for moving transportation vehicles and equipment. Common application include : manufacturing robots, material handling systems, hoist and cranes, automated storage facilities and retrieval systems.

POWERFLUX safety power rails are available in variety of configuration depending on applications requirements. Enclosed conductor systems typically enclosed conductors in a protective conduit meeting safety standard.

## POWER CALCULATION

- (1) Determine the motor load current by calculation based on the nameplate, catalogue, indoor wiring regulations, and other pertinent regulations. For a general estimation, assume 4A per 1Kw at 200V
- (2) If the demand factor, power factor and other relevant values are known, use them to correct the calculation for the load current. Also, try to select the most cost-effective setup, taking such points as additional power installation into consideration.
- (3) for an overhead traveling crane, you may use the following equation for calculation :

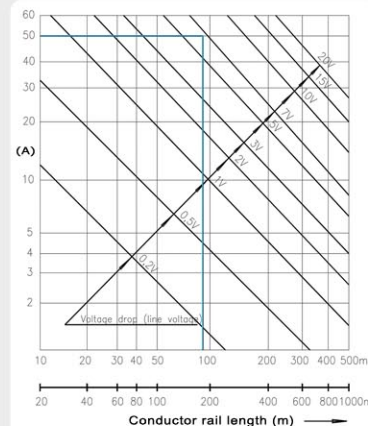
$$\text{Total load current} = \text{Main Hoisting motor current} + \text{Auxiliary Hoisting motor current} + \text{Traveling motor current} + \text{Traversing motor current}$$

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## EFFECT OF VOLTAGE DROPS

When the installed wiring is very long, voltage drops affect the motor and other loads positioned far from the power supply. If the voltage drop is too extreme (according to calculation of rop at the farthest point from the power supply when the total load current is applied), the rated current on the wiring should be raised by one step, or the power supply points should be changed or increased in number. The voltage drop in between the distribution board and the power supply points should also be taken into account.

VOLTAGE DROP CALCULATION EQUATION (three phase, three wire) :  $E = \sqrt{3} * I * Z * L$   
Where "I" is total rated load current (A), "Z" is impedance ( $\Omega/m$ ), and "L" is line length (m).

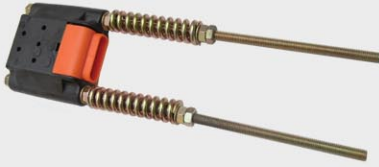


\*\* For example 50A rated current will be installed for 90m, the drop voltage will be 5V as shown on the chart.

\*\* Generally for more than 100m installation, please use middle power feed to minimize the drop voltage effect.

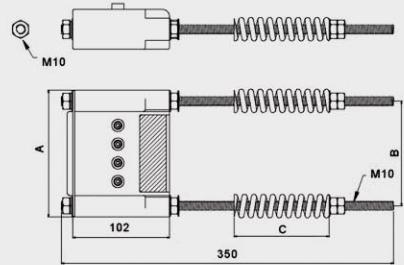
# ACCESSORIES

**POWERFLUX**<sup>®</sup>  
MOBILE POWER FEEDS



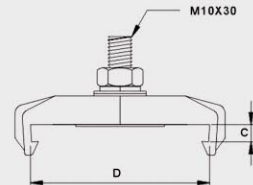
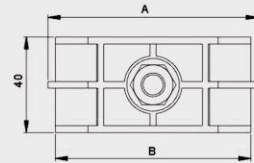
## END TENSIONER

Part No.	Type	Kg/pce	A	B	C
PX3000	3P	1.38	115	90	100
PX4000	4P	1.53	134	110	100
PX6000	6P	1.68	180	150	100



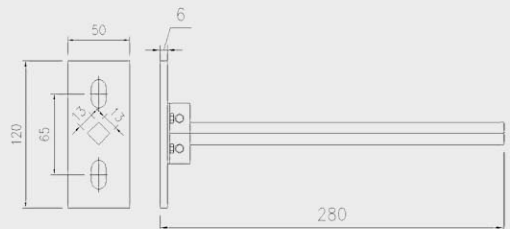
## HANGER CLAMP

Part No.	Type	Kg/pce	A	B	C	D	AMPERE
PX3800	3P	0.065	70	63	8.2	56	50A/80A/120A
PX3815	3P	0.065	70	63	8.7	56	150A
PX4800	4P	0.095	88	82	8.2	75	50A/80A/120A
PX4815	4P	0.095	88	82	8.7	75	150A
PX6800	6P	0.130	130	126	8.3	116	50A/80A



## TOWING ARM

Part No.	Kg/pce
PX8000	0.75

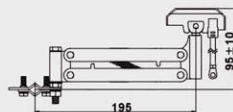


# ACCESSORIES

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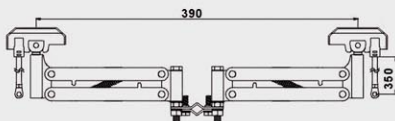
Single Current Collector



## CURRENT COLLECTOR

Part No.	Rating	Kg/pce
PX8030	600V 30A	0.27
PX8060	600V 60A	0.30

Single Current Collector



\* Double Current Collector is used for the application in special design of irregular or circle connection at a large current.

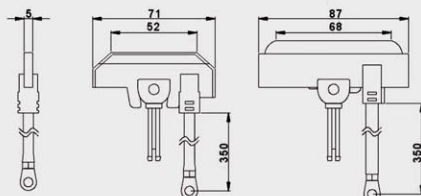


## COLLECTOR SHOE

Part No.	Rating	Kg/pce
PX8830	600V 30A	0.065
PX8860	600V 60A	0.095

30A

60A

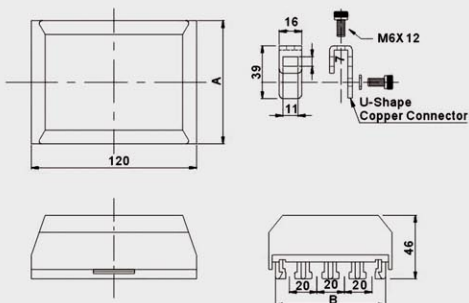


\* MIDDLE POWER FEED is used for connecting the insulated conductor rails that will be extended or the length is over 100 meters to avoid voltage drop.



## MIDDLE POWER FEED

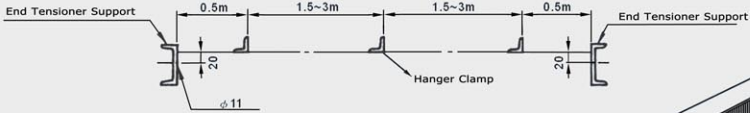
Part No.	Type	Kg/pce	A	B
PX3500	3P	0.065	70	61
PX4500	4P	0.095	90	81





# INSTALLATION GUIDE

## Supports Design

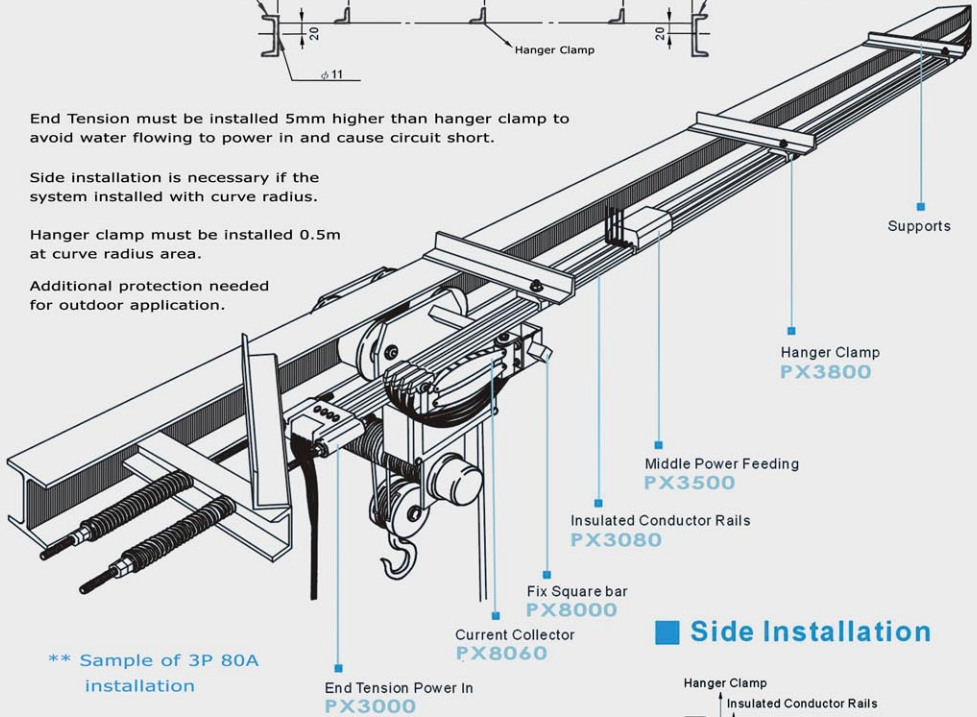


End Tension must be installed 5mm higher than hanger clamp to avoid water flowing to power in and cause circuit short.

Side installation is necessary if the system installed with curve radius.

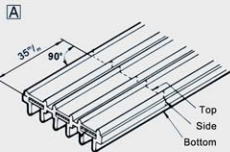
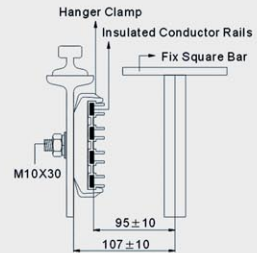
Hanger clamp must be installed 0.5m at curve radius area.

Additional protection needed for outdoor application.

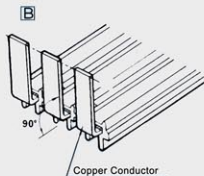


\*\* Sample of 3P 80A installation

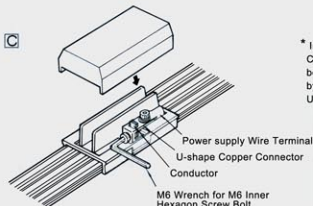
## Side Installation



\* Cut off insulated plastic PVC material at 35mm at the end of it.

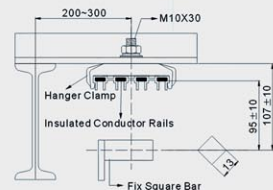


\* Bend upward copper conductor material at a 90° vertical angle.



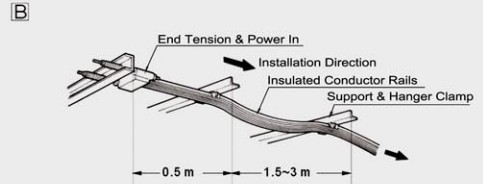
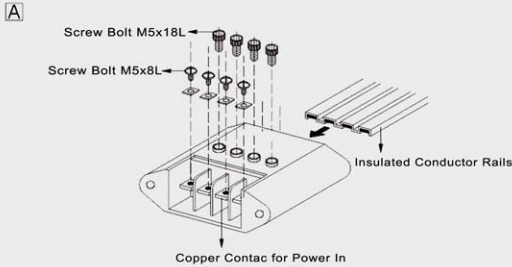
\* Insert both sides of 90° vertical angle Copper Conductor into Middle Power Feed and connect both sides of 90° vertical angle copper conductor by screwing up M6 Inner Hexagon screw bolt on U-shape Copper Connector.

## Vertical Installation



# INSTALLATION GUIDE

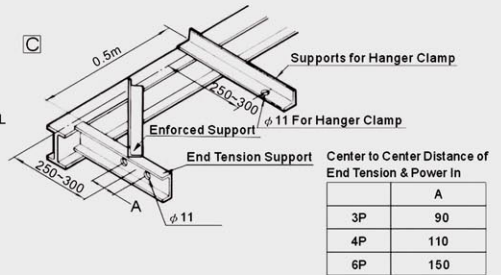
## END TENSION INSTALLATION



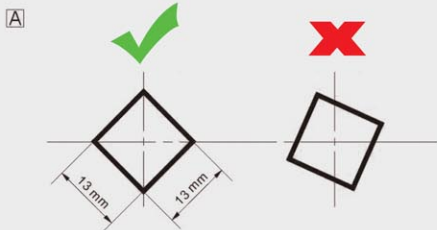
\* Fix End Tension & Power In at one side first, then pull Insulated Conductor Rails straight and fix it with the other End Tension & Power In at the other side.

### INSTALLATION PROCEDURES :

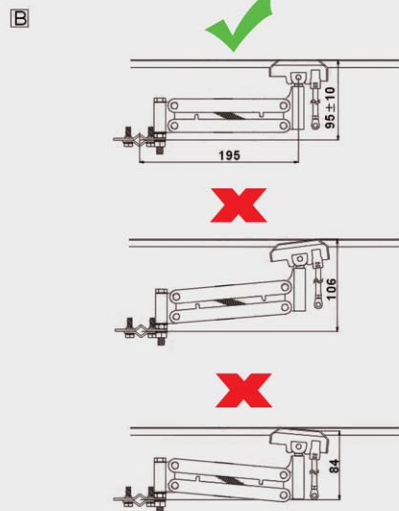
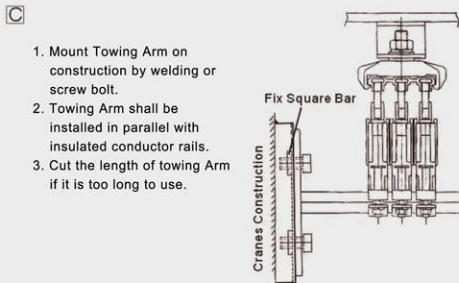
1. Insert Insulated Conductor Rails to the bottom of End Tension & Power In.
2. Use Screw Bolt M5x18L provided to fix insulated conductor rails.
3. Connect power supply wire terminal with Copper Contact by Screw Bolt M6x8L. Then place the cover to complete the installation procedures.



## CURRENT COLLECTOR INSTALLATION



\* Towing Arm shall be installed properly



\* The most proper distance between Insulated Conductor Rails and Fix Square Bar is 95mm