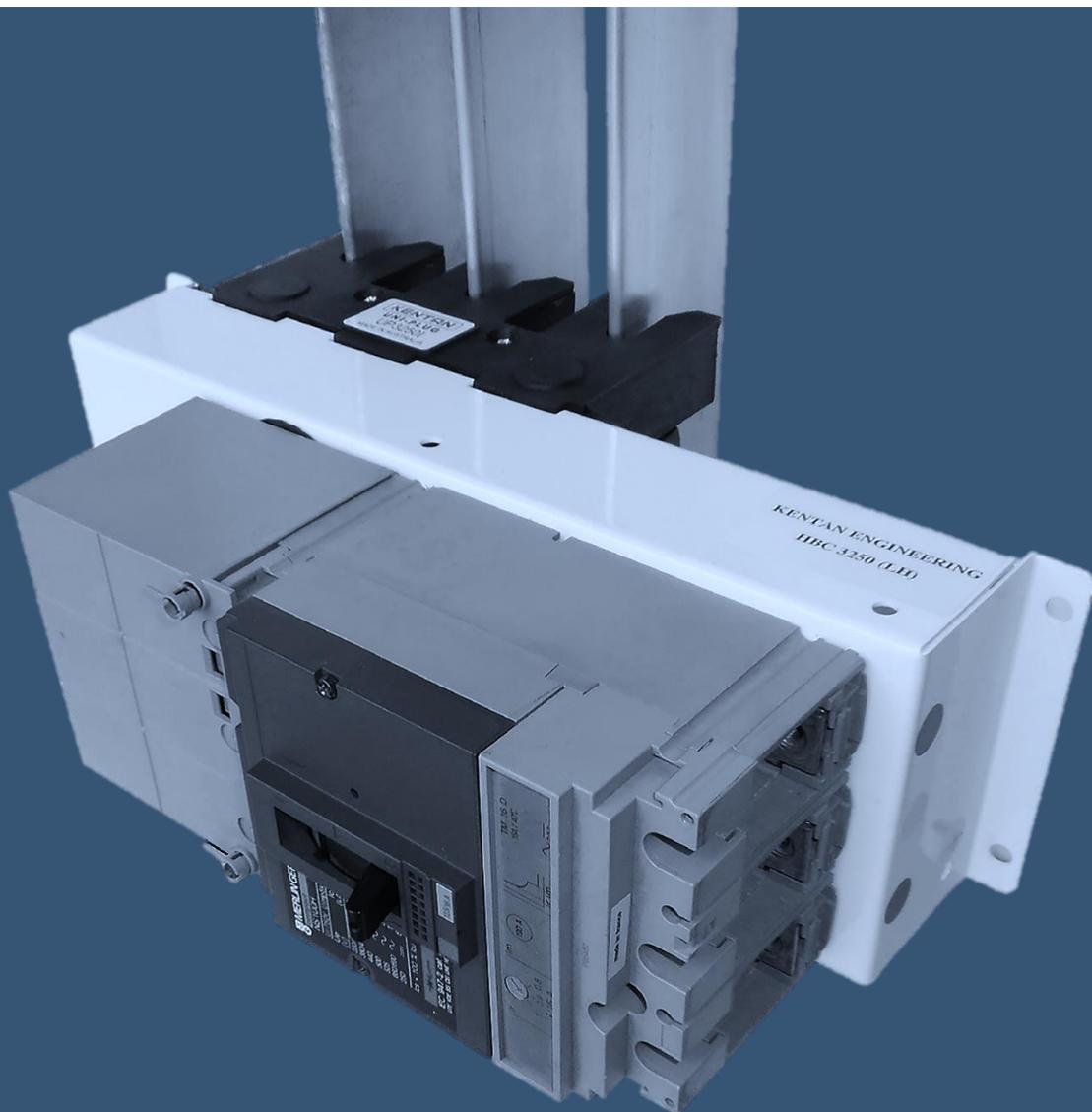




SWITCHBOARD EQUIPMENT AND AUTOMATION

# MCCB Plug-In Chassis Type HBC

Low Voltage Switchboard Equipment



Since product improvement is a continuing policy, we reserve the right to change specifications without notice.

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# Contents

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## Descriptive

Advantages of Busplugs .....	1
Use of HBC's .....	2
Construction .....	2
Ordering Information .....	3

## Technical

Standards and Type Tests .....	4
Ratings .....	4

## Dimensions

Standard Arrangement 3 Pole .....	5
Short and Offset Versions (3 Poles) .....	7
Standard Arrangement (4 Poles) .....	9

Typical HBC's .....	11
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# Descriptive

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## Advantages of Plug-Type Power Connections in Switchboards and Motor Control Centres

### For the Switchboard Manufacturer

- Assists in standardising method of switchboard construction.
- Simplifies changes made to drives and feeders while the switchboard or MCC is under construction
- Allows the demountable or withdrawable units to be made and tested away from the switchboard, then fitted at the final stage of manufacture.
- In the case of distribution boards, the MCCB's or switch-fuses can be purchased later in the construction programme due to the minimal amount of time needed to install.
- Reduces the amount of labour needed, compared to making solid connections onto the busbars.
- Provides a type tested method of connection.

### For the Customer/User

- Simplifies changes on site. The plug-in method of connection means that drives and feeders can be added, deleted, modified or maintained without having to isolate the switchboard and disrupt power to the facilities.
- Allows quick removal and substitution of spare units in the event of a failure.

### Safety

- Busplugs provide a positive means of isolation. Maintenance and repairs can be carried out on withdrawn units, even with the power on.
- Fully withdrawable units provide a visible confirmation of isolation of the circuit.

# Descriptive

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## Use of Horizontal Breaker Chassis

The Horizontal Breaker Chassis (HBC) adapts all brands of horizontally mounted moulded case circuit breakers for plug-in connection to vertical busbars with minimum work to the switchboard builder.

The MCCB chassis is mainly intended for feeder circuits. The horizontally mounted breakers make best use of the tier space and busbars. The orientation of the terminals suit conductors entering from an adjacent cable zone and simplify the connection requirements of Forms 3a and b and 4a and b to AS/NZS61439.2.2016. The system is designed for vertical busbars with 60mm phase centres.

## Construction

The mounting bracket is made from 1.6mm sheet steel. Finish is powder coated in white. Standard type-UP busplugs are fixed to the rear of the bracket. Connections between the plug and the MCCB are made by high quality insulated flexible copper busbar.

Mounting holes are provided on the HBC bracket to suit the brand/rating of MCCB nominated by the customer.

Styles relating to the location of the HBC bracket are:

- Standard arrangement
- Offset version
- Arrangements and dimensions to special order

# Descriptive

## Ordering Information

	Cat. No.	Standard Bracket Size	Standard Conductor Size	Comments
Standard Arrangement	HBC3250/125	1	2 -15.5 x 0.8 Flexibar	Suits all MCCBs
	HBC3250	1	3 -20 x 1 Flexibar	Suits most MCCB's (with thermal O/L relays)
	HBC3400	2	5 -24 x 1 Flexibar	Suits all MCCBs
	HBC3630	2S	8 -32 x 1 Flexibar	Suits all MCCBs where the 400 and 630A is the same frame size
	HBC3800	3	6mm copper sheet	Made for Terasaki or Schneider MCCBs
Offset Version	HBCO3250/125	1	2 -15.5 x 0.8 Flexibar	Suits all MCCB's
	HBCOS3250/125	1S		
	HBCO3250	1	3-20 x 1 Flexibar	Suits most MCCB's (with thermal O/L relays)
	HBCOS3250	1S		
	HBCO3400	2	5 -24 x 1 Flexibar	Suits all MCCB's
	HBCO3630	2S	8 -32 x 1 Flexibar	Suits all MCCB's where the 400 and 630A is the same frame size

### Notes

- HBC = HORIZONTAL BREAKER CHASSIS
- 3 = number of poles (4 pole is available to order for standard arrangement up to 630A)
- 250 etc = current rating of busplug
- /125 = current rating of flexi-bar if less than busplug rating
- Brand, type and rating of MCCB to be installed to be given at time of ordering.
- Busplugs are positioned on left or right hand side of the bracket. Location to be nominated at time of ordering.
- Special chassis and non-standard positioning of MCCB's made to order.
- Standard brackets for extra depth (adjustable) on Size 1 and 2 chassis. (Used where MCCBs of various depth toggles are operated through an escutcheon).
- Busplugs for 6.35mm busbar is standard. Busplugs are available to suit 10mm bar. Specify 10mm when ordering.
- 800A HBCs are only made for Schneider NS800 and TERASAKI XS and XH 630/800A MCCBs.
- Standard phase rotation for busplugs is RWBN left to right.

# Technical

## Standards and Type-Tests

Numerous tests have been carried out as prescribed in AS/NZS 61439.1.: 2016

These tests include:

- Temperature rise
- Dielectric properties
- Clearance and creepage distances
- Short circuit strength to 80kA in conjunction with a suitably rated MCCB
- Mechanical endurance of the contacts

## Ratings

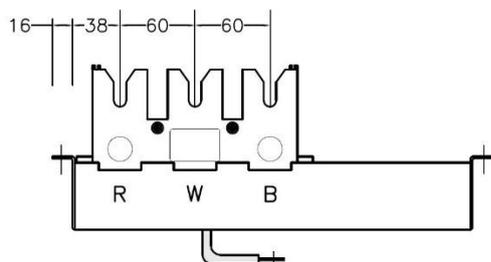
Rated Thermal Current	(A)	63-800A	
Rated Operational Voltage U <sub>e</sub>	(VAC)	1000V	(63-400A)
		800V	(800-1250A)
Rated Insulation Voltage U <sub>i</sub>	(VAC)	1000V	(63-400A)
		800V	(800A)
Short- Circuit. Current (With Back-Up HRC Fuses)	(kA)	63	
Short- Circuit. Current (With Back-Up MCCB)	(kA)	50 – 80 kA	
Frequency	(Hz)	40-60	
Permissible Ambient Temperature	(°C)	-20 - +70	
Contacts Per Pole		1	1
		2	(400A)
		4	(630/800A)
		5	(1000A)
		6	(1250A)
Contact Resistance	(μΩ)	59	(63-250A)
		34	(400A)
		19	(630/800A)

Refer to Publication UP2020 Busplugs type UP for further technical information.

# Dimensions

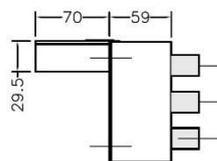
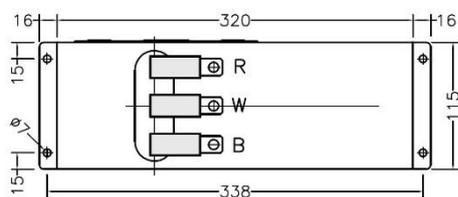
## Standard Arrangement (3 Poles)

Left Hand Side Busplugs

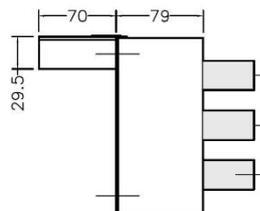
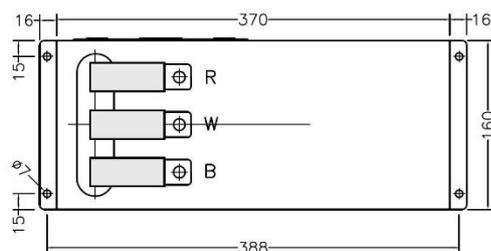


Typical Plan

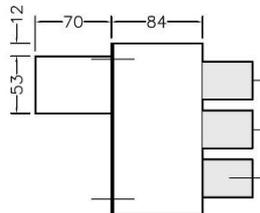
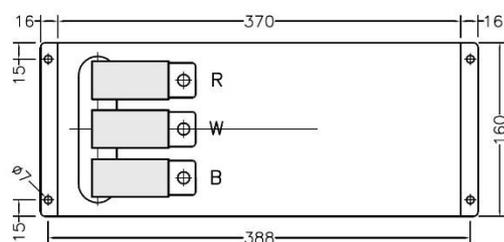
The standard location of the MCCB on the bracket places the rotary handle (if used) of various frame sizes of the same brand in a vertical line. This arrangement is generally governed by the size of the largest MCCB.



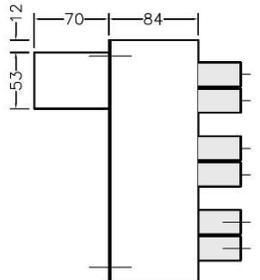
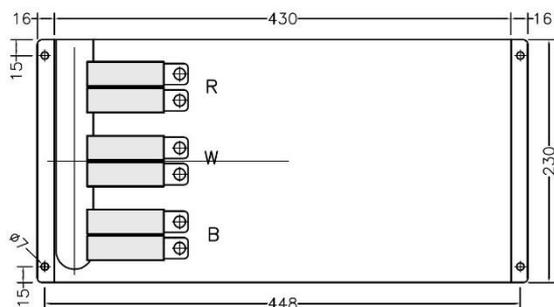
Size 1



Size 2



Size 2S

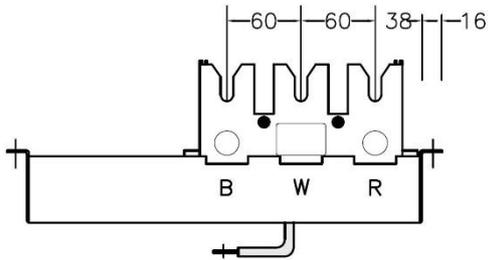


Size 3

# Dimensions

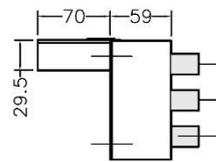
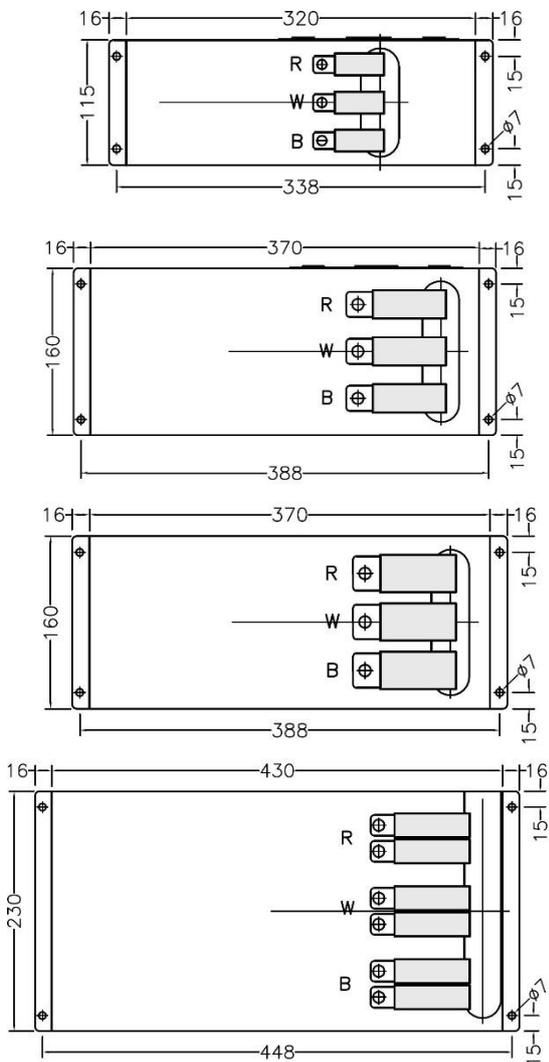
## Standard Arrangement (3 Poles)

### Right Hand Side Busplugs

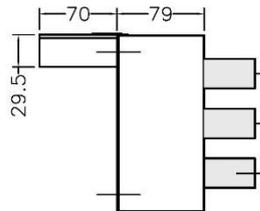


Typical Plan

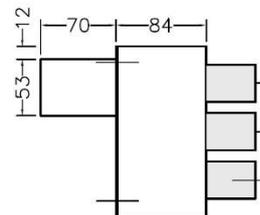
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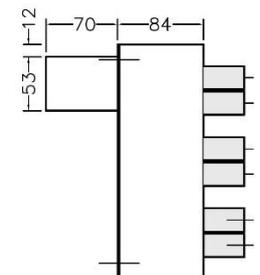
Size 1



Size 2



Size 2S

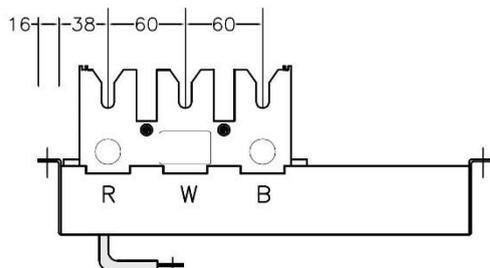


Size 3

# Dimensions

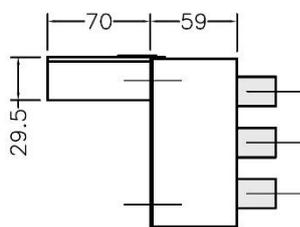
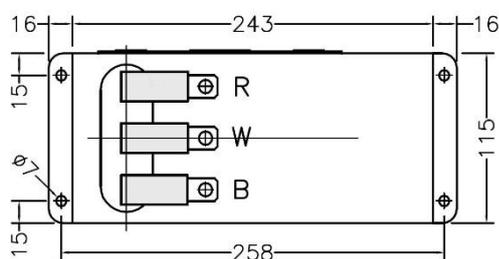
## Short and Offset Versions (3 Poles)

### Left Hand Side Busplugs

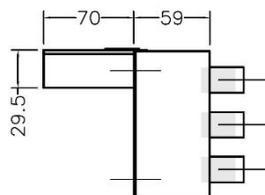
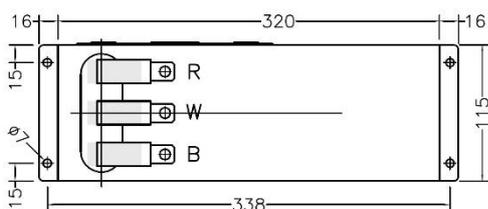


Typical Plan

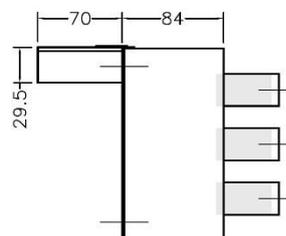
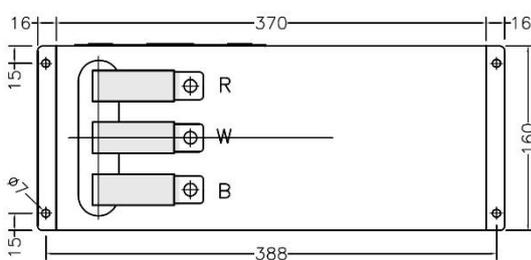
The offset version places the MCCB as close as practical to the end of the HBC bracket, giving max. space for connections. The rotary handles (if used) therefore do not align vertically for different ratings of the same brand of MCCB.



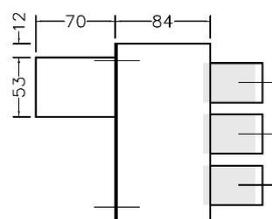
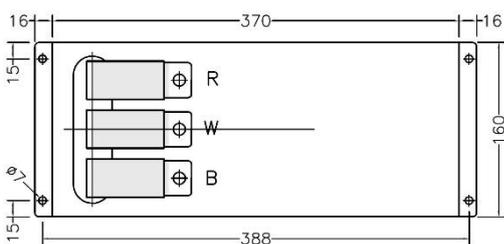
Size 1S  
(Short)



Size 1



Size 2

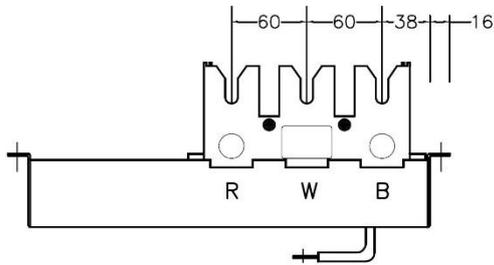


Size 2S

# Dimensions

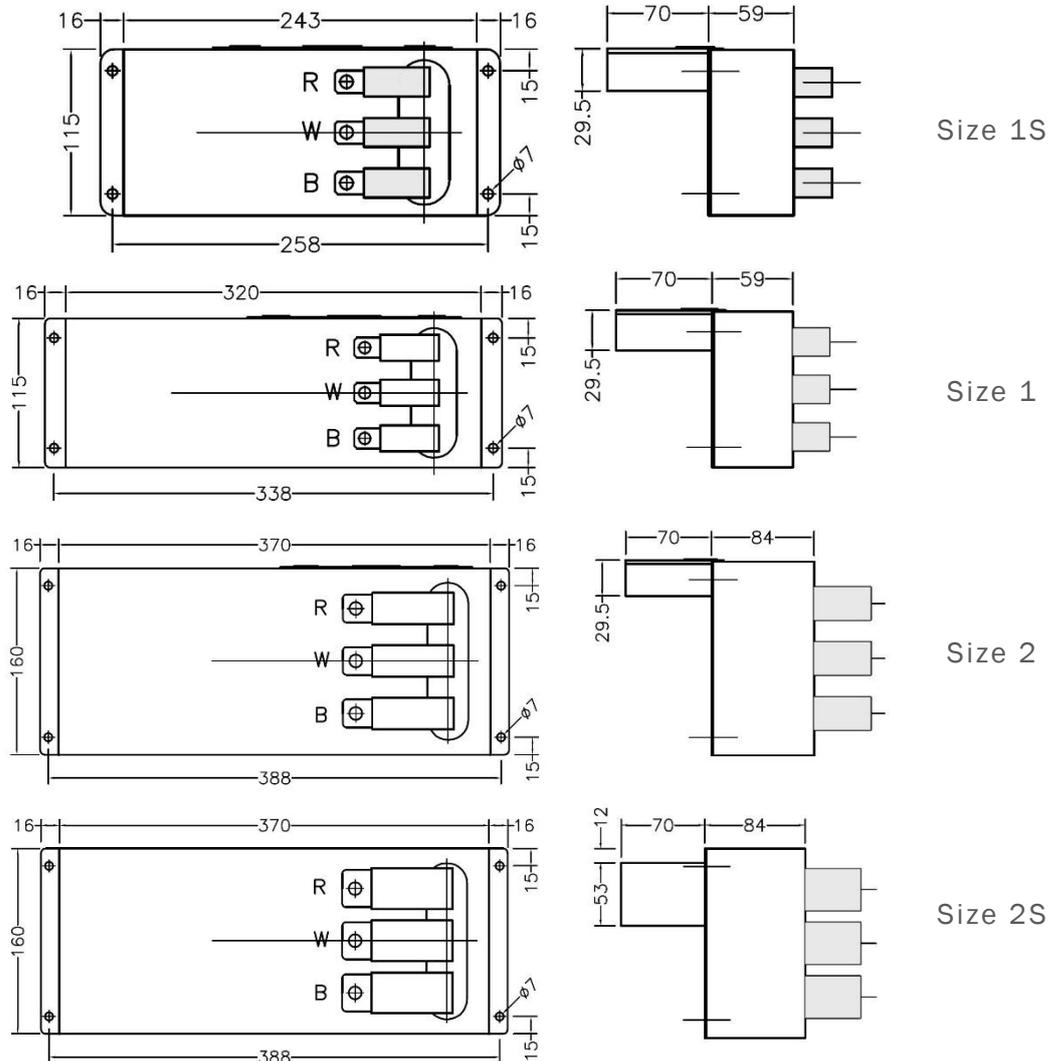
## Short and Offset Versions (3 Poles)

### Right Hand Side Busplugs



Typical Plan

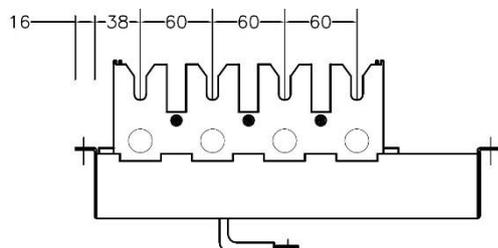
The offset version places the MCCB as close as practical to the end of the HBC bracket, giving max. space for connections. The rotary handles (if used) therefore do not align vertically for different ratings of the same brand of MCCB.



# Dimensions

## Standard Arrangement (4 Poles)

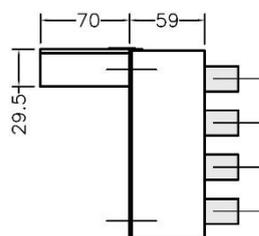
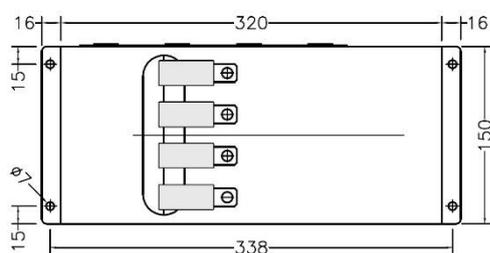
### Left Hand Side Busplugs



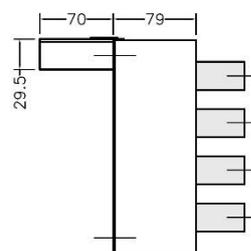
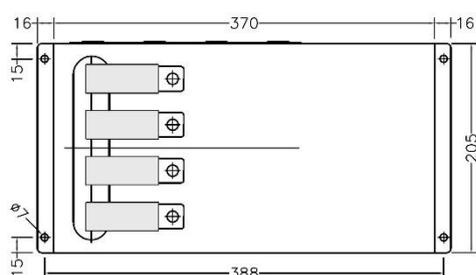
Typical Plan

The standard location of the MCCB on the bracket places the rotary handle (if used) of various frame sizes of the same brand in a vertical line. This arrangement is generally governed by the size of the largest MCCB.

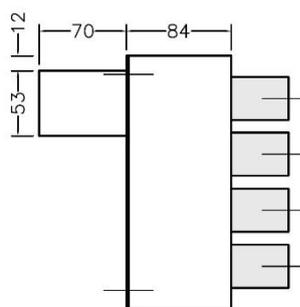
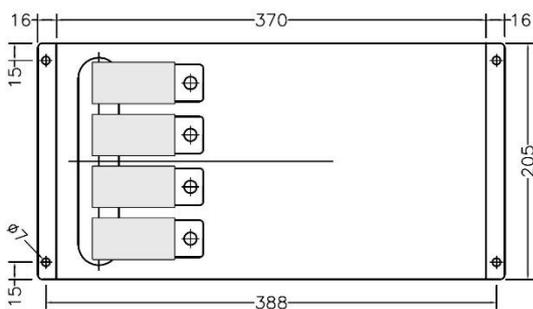
Phase rotation for flexibars to be provided on order.



Size 1



Size 2

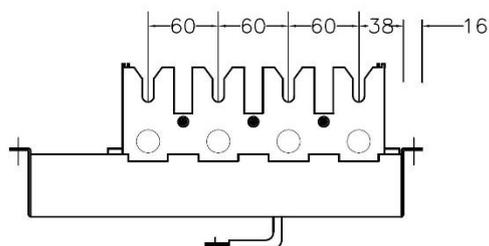


Size 2S

# Dimensions

## Standard Arrangement (4 Poles)

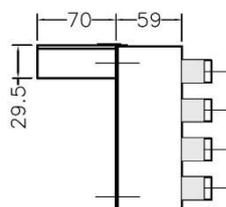
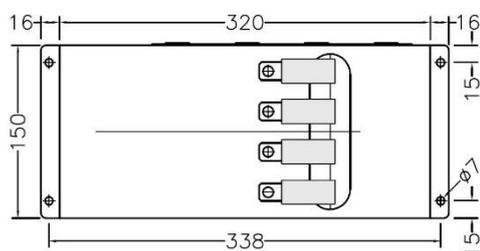
### Right Hand Side Busplugs



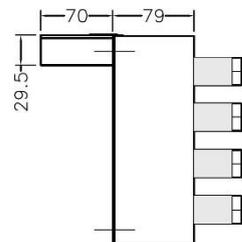
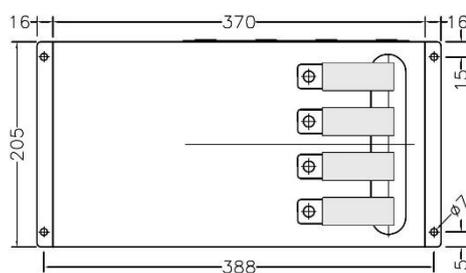
Typical Plan

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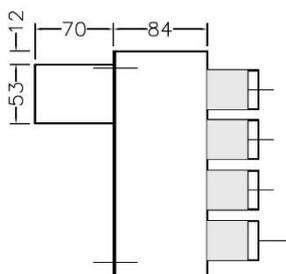
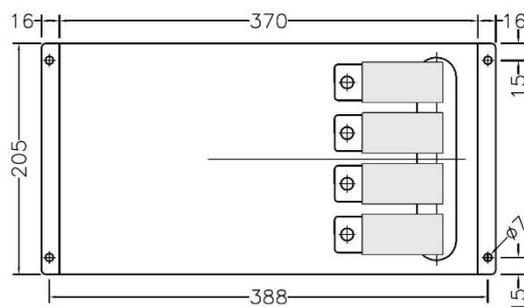
Phase rotation for flexibars to be provided on order.



Size 1



Size 2



Size 2S

# Typical HBC's

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Connections (line-side) should be covered by standard terminal shields available from the breaker manufacturer.



**HBC 4250**  
(Busplug on LHS)



**HBC 3250 With Depth Ext. Bracket**  
(Busplug on RHS)



**HBC 3250**  
(Busplug on LHS)



**HBC 3400**  
(Busplug on RHS)



**HBC 3800**  
(Busplug on LHS)  
Term. Cover Removed



**HBC 3800**  
(Busplug on RHS)



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