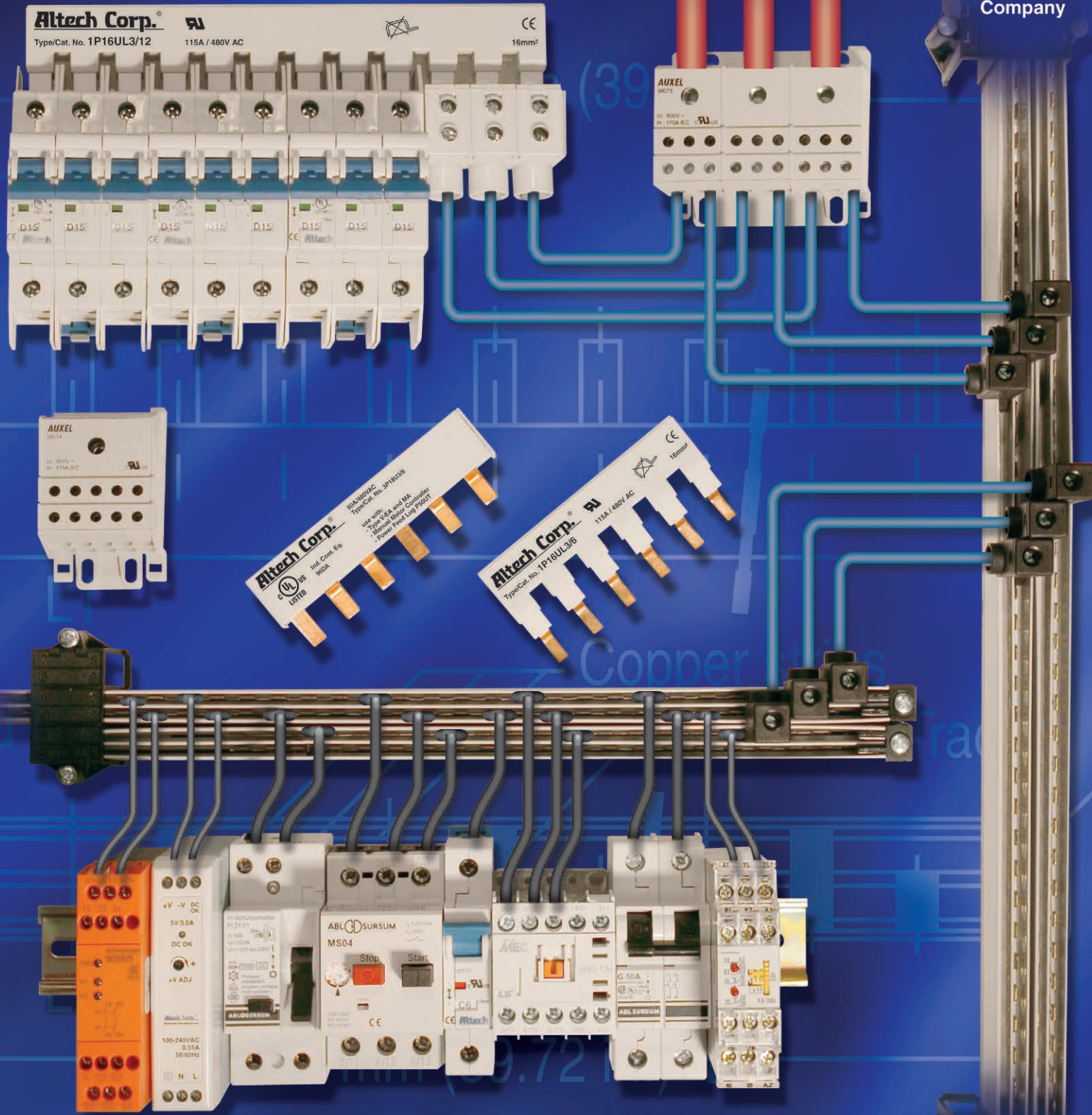


# Altech Corp.®

Serving the Automation & Control Industry since 1984

Quality System

Quality Endorsed Company



UNIVERSAL  
Power Distribution Systems

## Altech Corp. expands its Busbar System and Power Distribution Lines!

Since 1984, Altech Corporation has grown to become a leading supplier of automation and industrial control components. Headquartered in Flemington, NJ, Altech has an experienced staff of engineering, manufacturing and sales personnel to provide the highest quality products with superior service. This is the Altech Commitment!

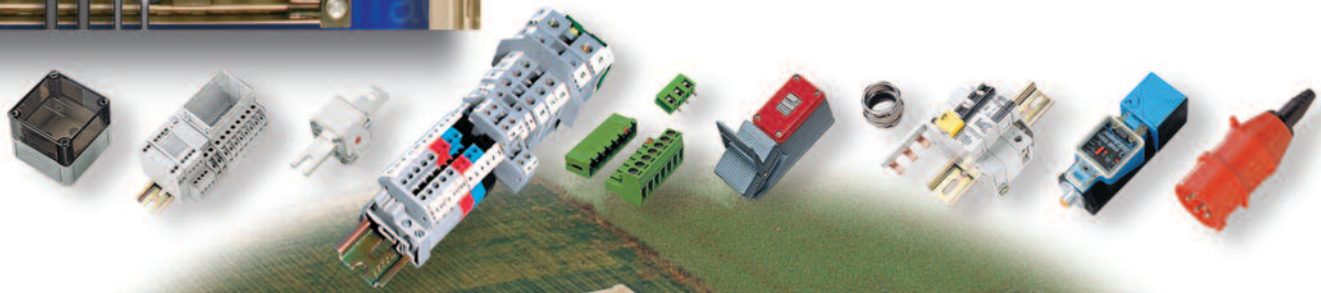
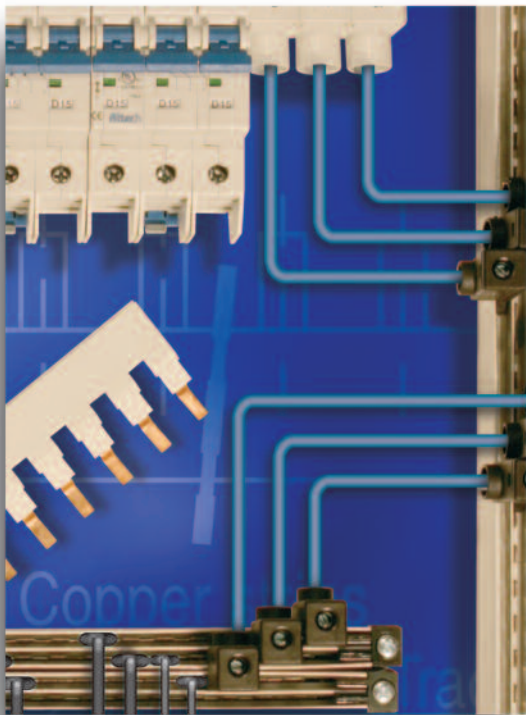
Altech Corp., a leading supplier of busbar systems in the US Market, has expanded its Busbar System Line and added a new Power Distribution System to its broad range of products.

Altech has an established line of UL1077/ UL508 Busbars with ratings up to 200A. They are UL recognized and listed for use with most competitor's supplementary protectors and manual motor controllers.

Altech has added a new line of UL489 Busbars to its product range with ratings of up to 115A. They are UL recognized for use with most of Altech's competitor's UL489 Miniature Circuit Breakers.

Altech's new Power Distribution System is a new way to simplify existing wiring methods inside a panel. It is modular, highly efficient and cost effective.

The Distribution Blocks are already established and the line was expanded for a greater variety. They are rated up to 310A. A new range of Input connector Blocks up to 800A was introduced to complete Altech's Power Distribution Block line.



## Quality Commitment

*Altech's control components meet diverse national and international standards such as UL, NEC, CSA IEC VDE and more. Altech provides superior customer service and delivery through Total Quality Management and Continuous Process Improvement. Altech is ISO 9001 approved. We perform these services with honesty and integrity and are committed to achieve these goals.*

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# Altech UL1077/508 Busbar System



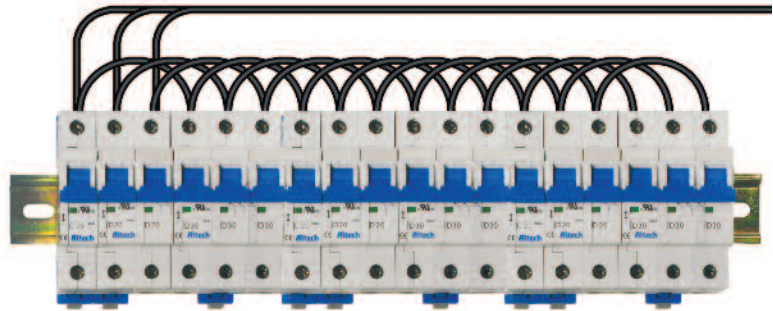
## UL1077/508 Listed Busbars

The Altech Busbar System is an innovative way to jumper up to 57 poles of Manual Motor Controllers (MMC) and Supplementary Protectors (SP).

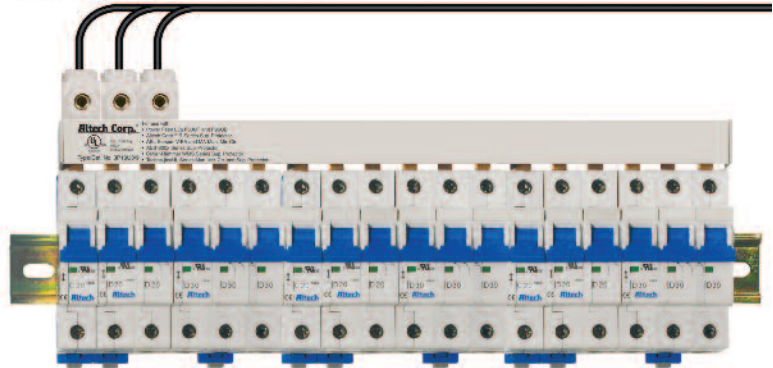
The advantages of this busbar system are:

- 30% Installation time savings
- Panel space savings
- Reduced maintenance
- High electrical ratings

Without Altech Busbar System



With Altech Busbar System



**Universal UL1077/508 Busbar fits most Supplementary Protectors and Manual Motor Controllers in the market!**

*Please contact Altech for details and further information.*

### UL1077/508 Busbar System

- 1-57 different pin configurations
- 1/2 pole spacing (auxiliary switch) available
- Power Feeding:  
Power Feed Lugs (115A), Direct Power Feed (115A), Power Feed Block (200A)
- UL recognized and listed for Altech's R-Series, V-EA Series and MA Series of Manual Motor Controllers and Supplementary Protectors
- UL recognized and listed for use with most popular UL1077 supplementary protectors and UL508 Manual Motor Controllers in the market.
- Customers can cut the Busbar without losing the UL approval
- Line/Load reversible

#### Technical Specifications

#### Busbars UL1077/ 508

<b>Material of Busbar</b>	Copper
<b>Material of Insulation (Housing)</b>	Polyamid
<b>Electrical Ratings</b>	18mm <sup>2</sup> : 80A/480VAC 25mm <sup>2</sup> : 100A/480VAC
<b>Short Circuit Withstand Rating</b>	10kA
<b>Applying Standards</b>	UL508, VDE0660 Part 100 and 502, VDE 0606, VDE 0659

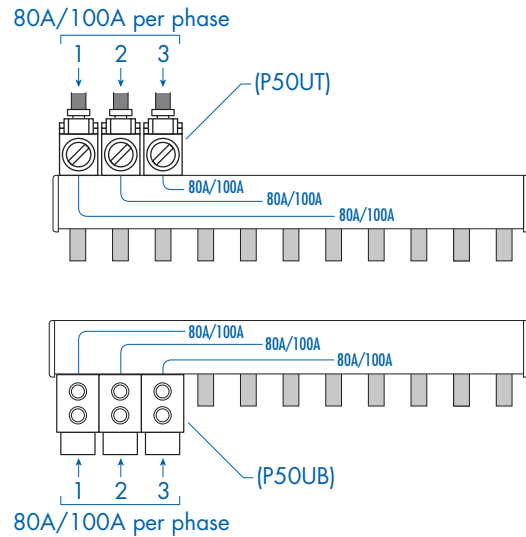
# Altech UL1077/508 Busbar System

## Power Feed Methods

### 1) Start/ End Feed Method

#### P50UT\* / P50UB\*

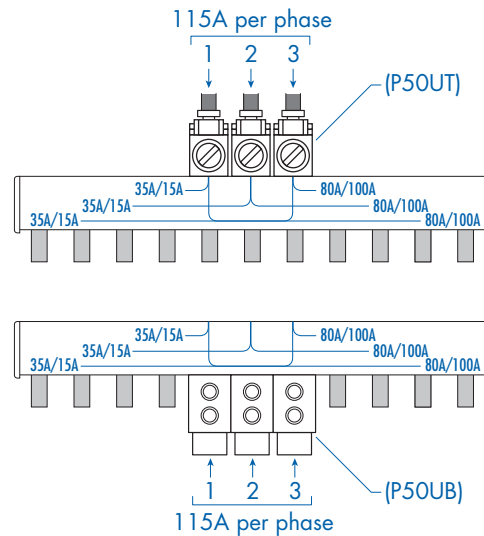
With the **P50UT** Power Feed Lug or the **P50UB** Modular Direct Power Feed as a Start/End Feeding Device a maximum input current of **80A/100A per Phase** can be achieved. 80A with 18mm<sup>2</sup> Busbar and 100A with 25mm<sup>2</sup> Busbar.



### 2) Center/ Middle Feed Method

#### P50UT\* / P50UB\*

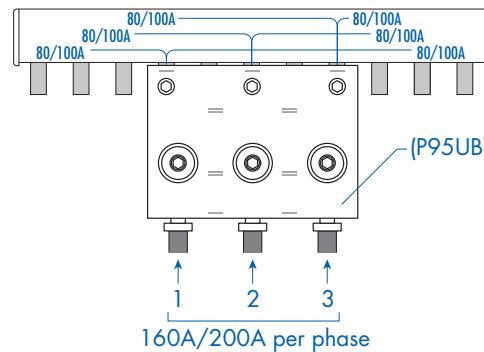
With the **P50UT** Power Feed Lug or the **P50UB** Modular Direct Power Feed as a Center/Middle Feeding Device a maximum input current of **115A per Phase** can be achieved. (18mm<sup>2</sup>: 80A + 35A; 25mm<sup>2</sup>: 100A + 15A)



#### P95UB\*

With the **P95UB** Power Feed Block as a Center/Middle Feeding Device a maximum input current of **160A/200A per Phase** can be achieved (160A with 18mm<sup>2</sup> Busbar and 200A with 25mm<sup>2</sup> Busbar).

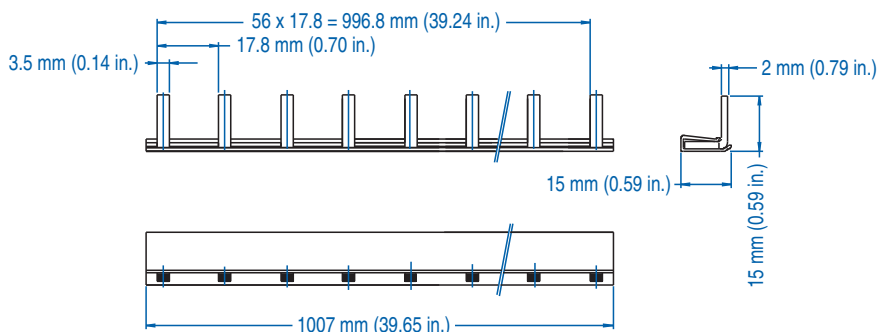
Note: The Power Feed Block can only be used with a standard spacing 3 Phase UL1077/508 Busbar.



\* For complete specifications and description of Feeding Devices see page 12-13.

# 1 PHASE BUSBAR - standard spacing

18mm<sup>2</sup> for 80A



Altech UL1077

Altech UL508

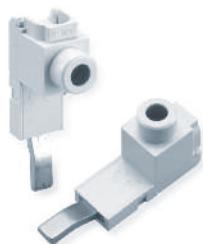
## 18mm<sup>2</sup> for 80A

Type/ Cat. No.	No. of Pins	No. of MMC to Jumper	Length [mm]
1P18U1/2	2	2x1 pole	32.5
1P18U1/3	3	3x1 pole	50.3
1P18U1/4	4	4x1 pole	68.0
1P18U1/5	5	5x1 pole	85.8
1P18U1/6	6	6x1 pole	103.5
1P18U1/7	7	7x1 pole	121.3
1P18U1/8	8	8x1 pole	139.0
1P18U1/9	9	9x1 pole	156.8
1P18U1/10	10	10x1 pole	174.5
1P18U1/11	11	11x1 pole	192.3
1P18U1/12	12	12x1 pole	210.0
1P18U1/13	13	13x1 pole	227.8
1P18U1/14	14	14x1 pole	245.5
1P18U1/15	15	15x1 pole	263.3
1P18U1/16	16	16x1 pole	281.0
1P18U1/17	17	17x1 pole	298.8
1P18U1/18	18	18x1 pole	316.5
1P18U1/19	19	19x1 pole	334.3
1P18U1/20	20	20x1 pole	352.0
1P18U1/21	21	21x1 pole	369.8
1P18U1/22	22	22x1 pole	387.5
1P18U1/23	23	23x1 pole	405.3
1P18U1/24	24	24x1 pole	423.0
1P18U1/25	25	25x1 pole	440.8
1P18U1/26	26	26x1 pole	458.5
1P18U1/27	27	27x1 pole	476.3
1P18U1/28	28	28x1 pole	494.0
1P18U1/29	29	29x1 pole	511.8

## 18mm<sup>2</sup> for 80A

Type/ Cat. No.	No. of Pins	No. of MMC to Jumper	Length [mm]
1P18U1/30	30	30x1 pole	529.5
1P18U1/31	31	31x1 pole	547.3
1P18U1/32	32	32x1 pole	565.0
1P18U1/33	33	33x1 pole	582.8
1P18U1/34	34	34x1 pole	600.5
1P18U1/35	35	35x1 pole	618.3
1P18U1/36	36	36x1 pole	636.0
1P18U1/37	37	37x1 pole	653.8
1P18U1/38	38	38x1 pole	671.5
1P18U1/39	39	39x1 pole	689.3
1P18U1/40	40	40x1 pole	707.0
1P18U1/41	41	41x1 pole	724.8
1P18U1/42	42	42x1 pole	742.5
1P18U1/43	43	43x1 pole	760.3
1P18U1/44	44	44x1 pole	778.0
1P18U1/45	45	45x1 pole	795.8
1P18U1/46	46	46x1 pole	813.5
1P18U1/47	47	47x1 pole	831.3
1P18U1/48	48	48x1 pole	849.0
1P18U1/49	49	49x1 pole	866.8
1P18U1/50	50	50x1 pole	884.5
1P18U1/51	51	51x1 pole	902.3
1P18U1/52	52	52x1 pole	920.0
1P18U1/53	53	53x1 pole	937.8
1P18U1/54	54	54x1 pole	955.5
1P18U1/55	55	55x1 pole	973.3
1P18U1/56	56	56x1 pole	991.0
1P18U1/57	57	57x1 pole	1008.8

## ACCESSORIES



Type/Cat. No: **P50UT**  
Description: Power Feed Lug



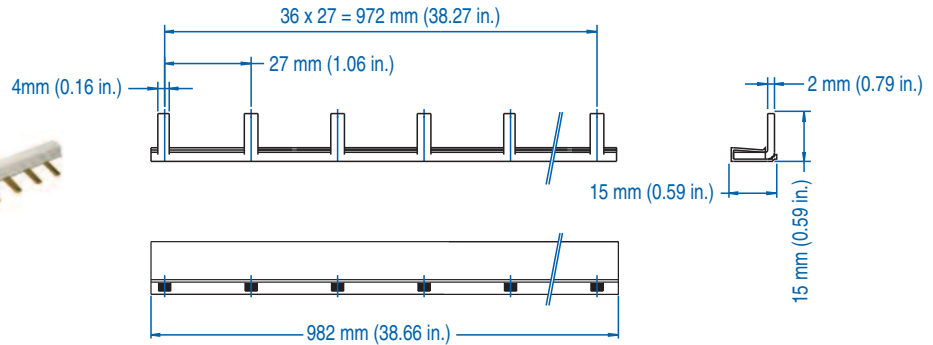
Type/Cat. No: **P50UB**  
Description: Modular Direct Power Feed



Type/Cat. No: **BRS5**  
Description: Insulation Cap

# 1 PHASE BUSBAR - 1/2 pole spacing

18mm<sup>2</sup> for 80A



## 18mm<sup>2</sup> for 80A

Type/ Cat. No.	No. of Pins	No. of MMC to Jumper	Length [mm]
1P18U1H/2	2	2x1 pole	39.0
1P18U1H/3	3	3x1 pole	66.0
1P18U1H/4	4	4x1 pole	93.0
1P18U1H/5	5	5x1 pole	120.0
1P18U1H/6	6	6x1 pole	147.0
1P18U1H/7	7	7x1 pole	174.0
1P18U1H/8	8	8x1 pole	201.0
1P18U1H/9	9	9x1 pole	228.0
1P18U1H/10	10	10x1 pole	255.0
1P18U1H/11	11	11x1 pole	282.0
1P18U1H/12	12	12x1 pole	309.0
1P18U1H/13	13	13x1 pole	336.0
1P18U1H/14	14	14x1 pole	363.0
1P18U1H/15	15	15x1 pole	390.0
1P18U1H/16	16	16x1 pole	417.0
1P18U1H/17	17	17x1 pole	444.0
1P18U1H/18	18	18x1 pole	471.0
1P18U1H/19	19	19x1 pole	498.0

## 18mm<sup>2</sup> for 80A

Type/ Cat. No.	No. of Pins	No. of MMC to Jumper	Length [mm]
1P18U1H/20	20	20x1 pole	525.0
1P18U1H/21	21	21x1 pole	552.0
1P18U1H/22	22	22x1 pole	579.0
1P18U1H/23	23	23x1 pole	606.0
1P18U1H/24	24	24x1 pole	633.0
1P18U1H/25	25	25x1 pole	660.0
1P18U1H/26	26	26x1 pole	687.0
1P18U1H/27	27	27x1 pole	714.0
1P18U1H/28	28	28x1 pole	741.0
1P18U1H/29	29	29x1 pole	768.0
1P18U1H/30	30	30x1 pole	795.0
1P18U1H/31	31	31x1 pole	822.0
1P18U1H/32	32	32x1 pole	849.0
1P18U1H/33	33	33x1 pole	876.0
1P18U1H/34	34	34x1 pole	903.0
1P18U1H/35	35	35x1 pole	930.0
1P18U1H/36	36	36x1 pole	957.0

## ACCESSORIES



Type/Cat. No: **P50UT**  
Description: Power Feed Lug



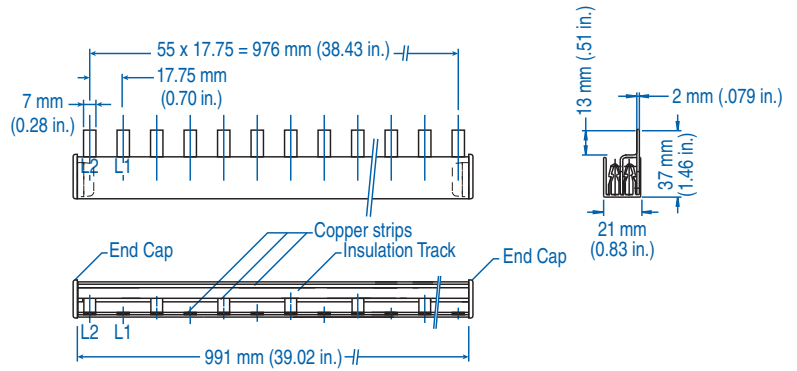
Type/Cat. No: **P50UB**  
Description: Modular Direct Power Feed



Type/Cat. No: **BRS5**  
Description: Insulation Cap

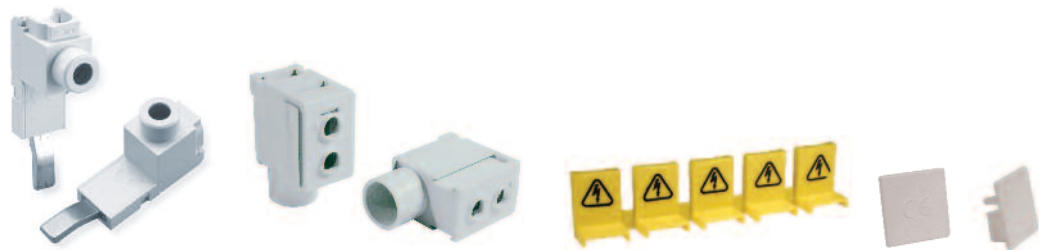
## 2 PHASE BUSBAR - standard spacing

18mm<sup>2</sup> for 80A / 25mm<sup>2</sup> for 100A



18mm <sup>2</sup> for 80A				25mm <sup>2</sup> for 100A			
Type/ Cat. No.	No. of Pins	No. of MMC to Jumper	Length [mm]	Type/ Cat. No.	No. of Pins	No. of MMC to Jumper	Length [mm]
2P18U3/4	4	2x2 pole	66.3	2P25U3/4	4	2x2 pole	66.3
2P18U3/6	6	3x2 pole	101.8	2P25U3/6	6	3x2 pole	101.8
2P18U3/8	8	4x2 pole	137.3	2P25U3/8	8	4x2 pole	137.3
2P18U3/10	10	5x2 pole	172.8	2P25U3/10	10	5x2 pole	172.8
2P18U3/12	12	6x2 pole	208.3	2P25U3/12	12	6x2 pole	208.3
2P18U3/14	14	7x2 pole	243.8	2P25U3/14	14	7x2 pole	243.8
2P18U3/16	16	8x2 pole	279.3	2P25U3/16	16	8x2 pole	279.3
2P18U3/18	18	9x2 pole	314.8	2P25U3/18	18	9x2 pole	314.8
2P18U3/20	20	10x2 pole	350.3	2P25U3/20	20	10x2 pole	350.3
2P18U3/22	22	11x2 pole	385.8	2P25U3/22	22	11x2 pole	385.8
2P18U3/24	24	12x2 pole	421.3	2P25U3/24	24	12x2 pole	421.3
2P18U3/26	26	13x2 pole	456.8	2P25U3/26	26	13x2 pole	456.8
2P18U3/28	28	14x2 pole	492.3	2P25U3/28	28	14x2 pole	492.3
2P18U3/30	30	15x2 pole	527.8	2P25U3/30	30	15x2 pole	527.8
2P18U3/32	32	16x2 pole	563.3	2P25U3/32	32	16x2 pole	563.3
2P18U3/34	34	17x2 pole	598.8	2P25U3/34	34	17x2 pole	598.8
2P18U3/36	36	18x2 pole	634.3	2P25U3/36	36	18x2 pole	634.3
2P18U3/38	38	19x2 pole	669.8	2P25U3/38	38	19x2 pole	669.8
2P18U3/40	40	20x2 pole	705.3	2P25U3/40	40	20x2 pole	705.3
2P18U3/42	42	21x2 pole	740.8	2P25U3/42	42	21x2 pole	740.8
2P18U3/44	44	22x2 pole	776.3	2P25U3/44	44	22x2 pole	776.3
2P18U3/46	46	23x2 pole	811.8	2P25U3/46	46	23x2 pole	811.8
2P18U3/48	48	24x2 pole	847.3	2P25U3/48	48	24x2 pole	847.3
2P18U3/50	50	25x2 pole	882.8	2P25U3/50	50	25x2 pole	882.8
2P18U3/52	52	26x2 pole	918.3	2P25U3/52	52	26x2 pole	918.3
2P18U3/54	54	27x2 pole	953.8	2P25U3/54	54	27x2 pole	953.8
2P18U3/56	56	28x2 pole	989.3	2P25U3/56	56	28x2 pole	989.3

## ACCESSORIES

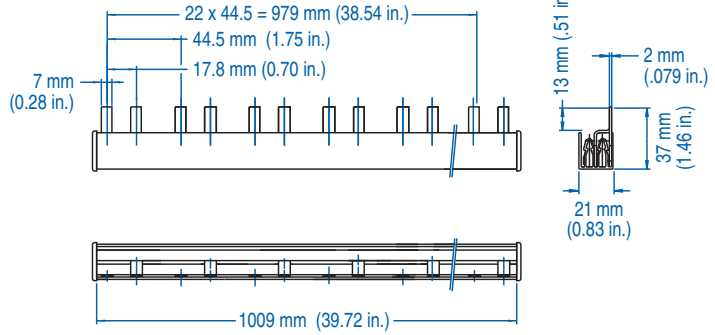


Type/Cat. No:	P50UT	P50UB	BRS5	18/25CAP3P
Description:	Power Feed Lug	Modular Direct Power Feed	Insulation Cap	End Cap



# 2 PHASE BUSBAR - 1/2 pole spacing

18mm<sup>2</sup> for 80A / 25mm<sup>2</sup> for 100A



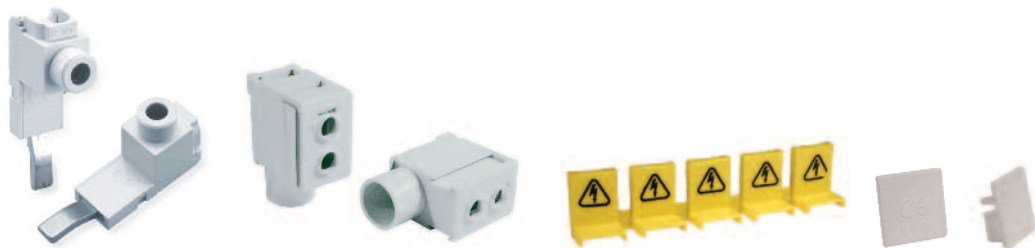
## 18mm<sup>2</sup> for 80A

Type/ Cat. No.	No. of Pins	No. of MMC to Jumper	Length [mm]
2P18U3H/4	4	2x2 pole	75.3
2P18U3H/6	6	3x2 pole	119.8
2P18U3H/8	8	4x2 pole	164.3
2P18U3H/10	10	5x2 poles	208.8
2P18U3H/12	12	6x2 pole	253.3
2P18U3H/14	14	7x2 pole	297.8
2P18U3H/16	16	8x2 pole	342.3
2P18U3H/18	18	9x2 pole	386.8
2P18U3H/20	20	10x2 pole	431.3
2P18U3H/22	22	11x2 pole	475.8
2P18U3H/24	24	12x2 pole	520.3
2P18U3H/26	26	13x2 pole	564.8
2P18U3H/28	28	14x2 pole	609.3
2P18U3H/30	30	15x2 pole	653.8
2P18U3H/32	32	16x2 pole	698.3
2P18U3H/34	34	17x2 pole	742.8
2P18U3H/36	36	18x2 pole	787.3
2P18U3H/38	38	19x2 pole	831.8
2P18U3H/40	40	20x2 pole	876.3
2P18U3H/42	42	21x2 pole	920.8
2P18U3H/44	44	22x2 pole	965.3
2P18U3H/46	46	23x2 pole	1009.8
2P18U3H/48	48	24x2 pole	1054.3
2P18U3H/50	50	25x2 pole	1098.8
2P18U3H/52	52	26x2 pole	1143.3
2P18U3H/54	54	27x2 pole	1187.8
2P18U3H/56	56	28x1 pole	1232.3

## 25mm<sup>2</sup> for 100A

Type/ Cat. No.	No. of Pins	No. of MMC to Jumper	Length [mm]
2P25U3H/4	4	2x2 pole	75.3
2P25U3H/6	6	3x2 pole	119.8
2P25U3H/8	8	4x2 pole	164.3
2P25U3H/10	10	5x2 pole	208.8
2P25U3H/12	12	6x2 pole	253.3
2P25U3H/14	14	7x2 pole	297.8
2P25U3H/16	16	8x2 pole	342.3
2P25U3H/18	18	9x2 pole	386.8
2P25U3H/20	20	10x2 pole	431.3
2P25U3H/22	22	11x2 pole	475.8
2P25U3H/24	24	12x2 pole	520.3
2P25U3H/26	26	13x2 pole	564.8
2P25U3H/28	28	14x2 pole	609.3
2P25U3H/30	30	15x2 pole	653.8
2P25U3H/32	32	16x2 pole	698.3
2P25U3H/34	34	17x2 pole	742.8
2P25U3H/36	36	18x2 pole	787.3
2P25U3H/38	38	19x2 pole	831.8
2P25U3H/40	40	20x2 pole	876.3
2P25U3H/42	42	21x2 pole	920.8
2P25U3H/44	44	22x2 pole	965.3
2P25U3H/46	46	23x2 pole	1009.8
2P25U3H/48	48	24x2 pole	1054.3
2P25U3H/50	50	25x2 pole	1098.8
2P25U3H/52	52	26x2 pole	1143.3
2P25U3H/54	54	27x2 pole	1187.8
2P25U3H/56	56	28x2 pole	1232.3

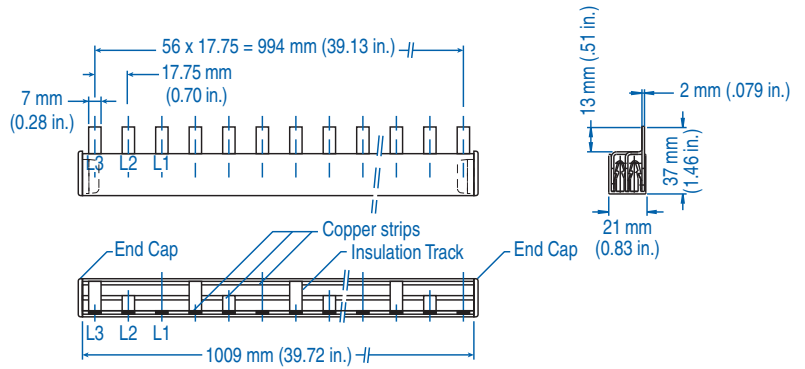
## ACCESSORIES



Type/Cat. No:	P50UT	P50UB	BRS5	18/25CAP3P
Description:	Power Feed Lug	Modular Direct Power Feed	Insulation Cap	End Cap

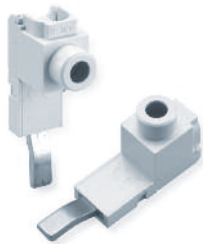
## 3 PHASE BUSBAR - standard spacing

18mm<sup>2</sup> for 80A / 25mm<sup>2</sup> for 100A



18mm <sup>2</sup> for 80A				25mm <sup>2</sup> for 100A			
Type/ Cat. No.	No. of Pins	No. of MMC to Jumper	Length [mm]	Type/ Cat. No.	No. of Pins	No. of MMC to Jumper	Length [mm]
3P18U3/6	6	2x3 pole	101.8	3P25U3/6	6	2x3 pole	101.8
3P18U3/9	9	3x3 pole	155.0	3P25U3/9	9	3x3 pole	155.0
3P18U3/12	12	4x3 pole	208.3	3P25U3/12	12	4x3 pole	208.3
3P18U3/15	15	5x3 pole	261.5	3P25U3/15	15	5x3 pole	261.5
3P18U3/18	18	6x3 pole	314.8	3P25U3/18	18	6x3 pole	314.8
3P18U3/21	21	7x3 pole	368.0	3P25U3/21	21	7x3 pole	368.0
3P18U3/24	24	8x3 pole	421.3	3P25U3/24	24	8x3 pole	421.3
3P18U3/27	27	9x3 pole	474.5	3P25U3/27	27	9x3 pole	474.5
3P18U3/30	30	10x3 pole	527.8	3P25U3/30	30	10x3 pole	527.8
3P18U3/33	33	11x3 pole	581.0	3P25U3/33	33	11x3 pole	581.0
3P18U3/36	36	12x3 pole	634.3	3P25U3/36	36	12x3 pole	634.3
3P18U3/39	39	13x3 pole	687.5	3P25U3/39	39	13x3 pole	687.5
3P18U3/42	42	14x3 pole	740.8	3P25U3/42	42	14x3 pole	740.8
3P18U3/45	45	15x3 pole	794.0	3P25U3/45	45	15x3 pole	794.0
3P18U3/48	48	16x3 pole	847.3	3P25U3/48	48	16x3 pole	847.3
3P18U3/51	51	17x3 pole	900.5	3P25U3/51	51	17x3 pole	900.5
3P18U3/54	54	18x3 pole	953.8	3P25U3/54	54	18x3 pole	953.8
3P18U3/57	57	19x3 pole	1007.0	3P25U3/57	57	19x3 pole	1007.0

## ACCESSORIES



Type/Cat. No: **P50UT**  
Description: Power Feed Lug



Type/Cat. No: **P50UB**  
Description: Modular Direct Power Feed



Type/Cat. No: **P95UB**  
Description: Power Feed Block



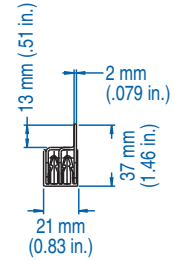
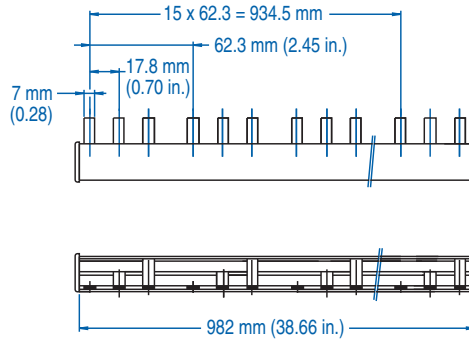
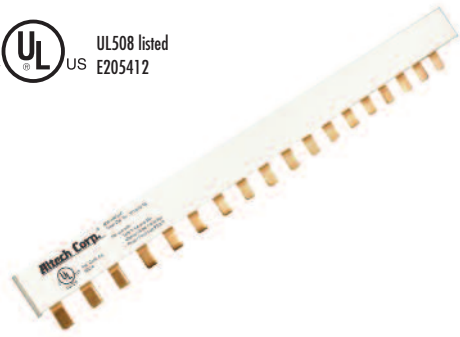
Type/Cat. No: **BRS5**  
Description: Insulation Cap



Type/Cat. No: **18/25CAP3P**  
Description: End Cap

# 3 PHASE BUSBAR - 1/2 pole spacing

18mm<sup>2</sup> for 80A / 25mm<sup>2</sup> for 100A



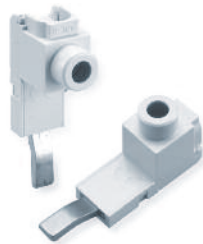
## 18mm<sup>2</sup> for 80A

Type/ Cat. No.	No. of Pins	No. of MMC to Jumper	Length [mm]
3P18U3H/6	6	2x3 pole	110.8
3P18U3H/9	9	3x3 pole	173.1
3P18U3H/12	12	4x3 pole	235.4
3P18U3H/15	15	5x3 pole	297.7
3P18U3H/18	18	6x3 pole	360.0
3P18U3H/21	21	7x3 pole	422.3
3P18U3H/24	24	8x3 pole	484.6
3P18U3H/27	27	9x3 pole	546.9
3P18U3H/30	30	10x3 pole	609.2
3P18U3H/33	33	11x3 pole	671.5
3P18U3H/36	36	12x3 pole	733.8
3P18U3H/39	39	13x3 pole	796.1
3P18U3H/42	42	14x3 pole	858.4
3P18U3H/45	45	15x3 pole	920.7
3P18U3H/48	48	16x3 pole	983.0
3P18U3H/51	51	17x3 pole	1045.3
3P18U3H/54	54	18x3 pole	1107.6
3P18U3H/57	57	19x3 pole	1169.9

## 25mm<sup>2</sup> for 100A

Type/ Cat. No.	No. of Pins	No. of MMC to Jumper	Length [mm]
3P25U3H/6	6	2x3 pole	110.8
3P25U3H/9	9	3x3 pole	173.1
3P25U3H/12	12	4x3 pole	235.4
3P25U3H/15	15	5x3 pole	297.7
3P25U3H/18	18	6x3 pole	360.0
3P25U3H/21	21	7x3 pole	422.3
3P25U3H/24	24	8x3 pole	484.6
3P25U3H/27	27	9x3 pole	546.9
3P25U3H/30	30	10x3 pole	609.2
3P25U3H/33	33	11x3 pole	671.5
3P25U3H/36	36	12x3 pole	733.8
3P25U3H/39	39	13x3 pole	796.1
3P25U3H/42	42	14x3 pole	858.4
3P25U3H/45	45	15x3 pole	920.7
3P25U3H/48	48	16x3 pole	983.0
3P25U3H/51	51	17x3 pole	1045.3
3P25U3H/54	54	18x3 pole	1107.6
3P25U3H/57	57	19x3 pole	1169.9

## ACCESSORIES



Type/Cat. No: **P50UT**  
Description: Power Feed Lug



Type/Cat. No: **P50UB**  
Description: Modular Direct Power Feed



Type/Cat. No: **BRS5**  
Description: Insulation Cap



Type/Cat. No: **18/25CAP3P**  
Description: End Cap

## Power Feed Devices

Easy connection of power supply wires to the busbar/MCB. Power Feed Devices ensure permanent connection.

### Power Feed Lug

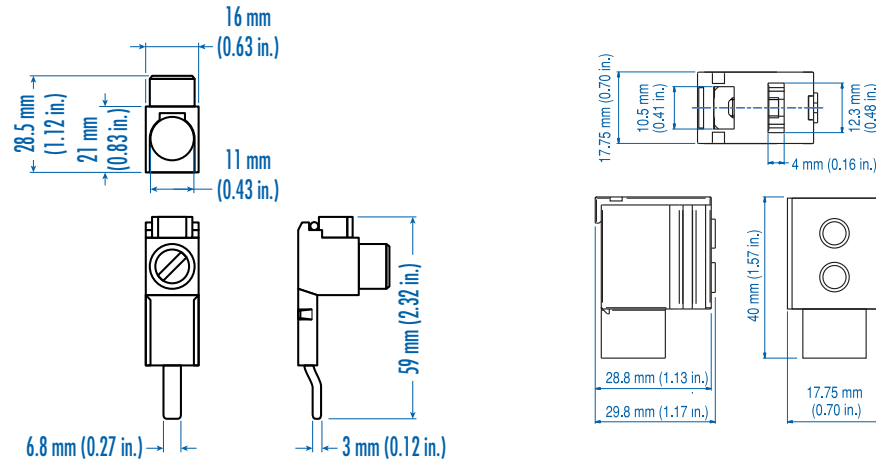


### Modular Direct Power Feed

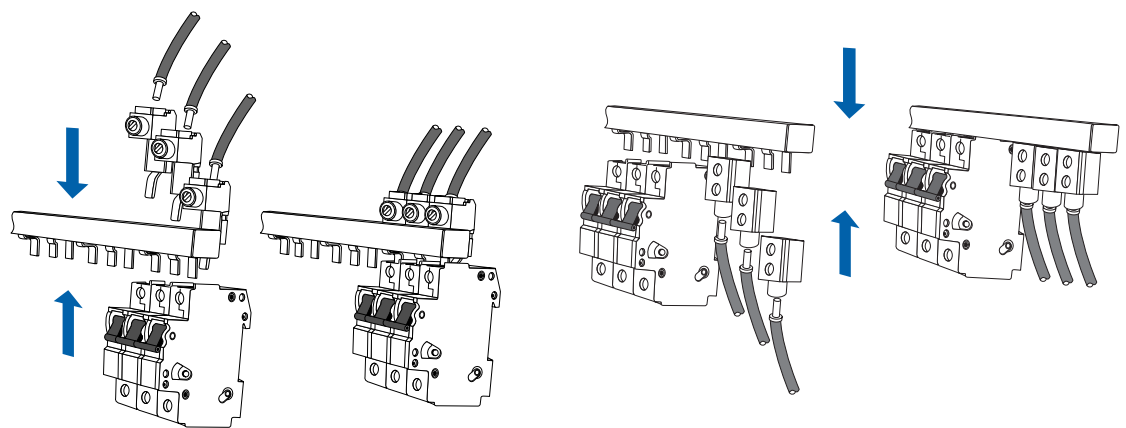


Type/Cat. No.	P50UT	P50UB
Electrical Ratings	115A/480VAC	115A/480VAC
Terminal Site Acceptability	10-1/0 AWG (1.5-50mm <sup>2</sup> )	14-1 AWG (1.5-50mm <sup>2</sup> )
Recommended/ Required Torque	5.6Nm (50lb. in.)	4Nm (35.4 lb. in.)
Material of Lug/ Terminal	Brass	Brass
Insulation Material	Polyamid	Polyamid
For use with	UL1077/508 18 and 25mm <sup>2</sup> 1-3 phase busbars	UL1077/508 18 and 25mm <sup>2</sup> 1-3 phase busbars

## Dimensions



## Assembly Instructions



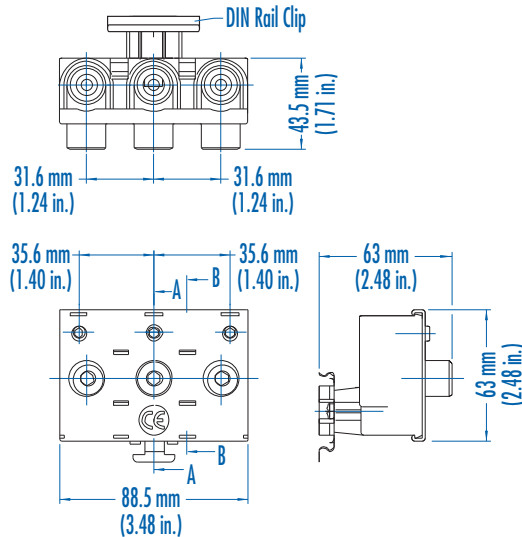
The power feed lugs (Cat. # P50UT) fit together with the lugs of the busbar in the terminals of the MCB/MA.

**Power Feed Block**

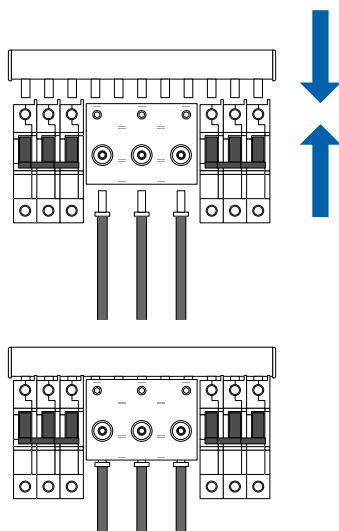


<b>Type/Cat. No.</b>	<b>P95UB</b>
<b>Electrical Ratings</b>	200A/ 480VAC
<b>Terminal Site Acceptability</b>	1-4/0 AWG (50-120mm <sup>2</sup> )
<b>Recommended/ Required Torque</b>	19.5Nm (175lb. in.)
<b>Material of Lug/ Terminal</b>	Brass
<b>Insulation Material</b>	Polyamid
<b>For use with</b>	UL1077/508 18 and 25mm <sup>2</sup> 3 phase busbars (standard spacing only)

**Dimensions**

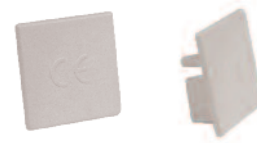


**Assembly Instructions**



**Miscellaneous Accessories**

**End Caps**



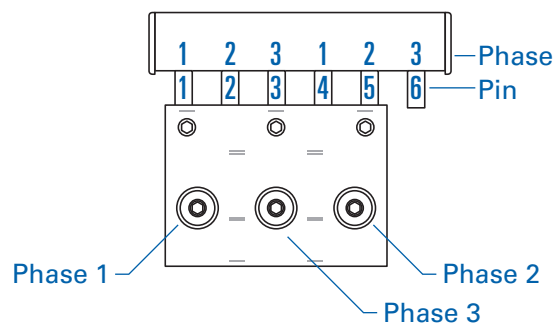
**Type/Cat. No:** 18/25CAP3P  
**For use with:** 18/25mm<sup>2</sup> 2&3 phase Busbar

**Insulation Caps**



**Type/Cat. No:** BRS5 (5 per strip)  
**For use with:** 18/25mm<sup>2</sup> 1-3 phase Busbar

NOTE: The Power Feed Block uses the space of 5 Pins of the standard spacing Busbar (see drawing below). Phase 1 connects to Pin 1, Phase 2 to Pin 3 and Phase 3 to Pin 5. Pin 2 and 4 are not in use. Pin 6 should be covered with an insulation cap if phase sequence stays the same. Therefore, the Power Feed Block covers 6 pins to connect to the three phases.



# Altech UL489 Busbar System

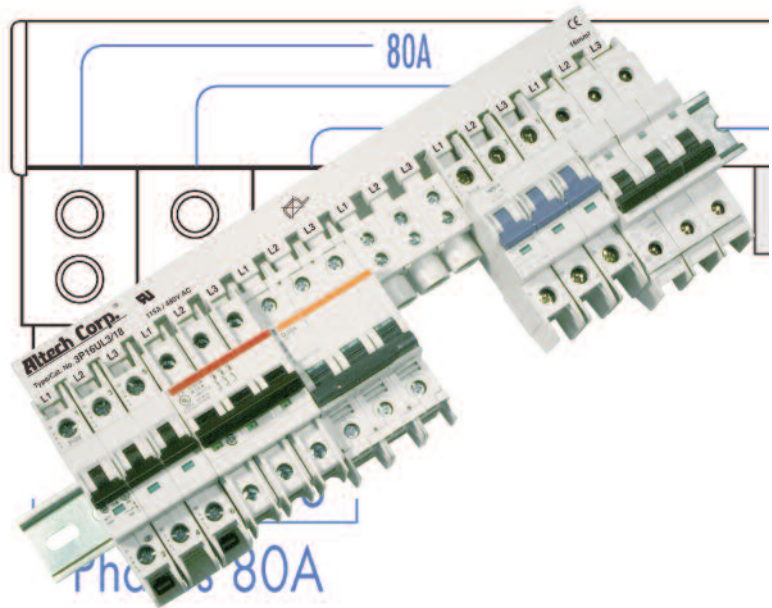


## UL489 Listed Busbars

The Altech Busbar System is an innovative way to jumper power to Miniature Molded Circuit Breakers.

The advantages of this busbar system are:

- 30% Installation time savings
- Panel space savings
- Reduced maintenance
- High electrical ratings



**Universal UL489 Busbar fits most UL489 Miniature Circuit Breakers in the market!**  
*Please contact Altech for details and further information.*

### UL489 Busbar System

- Every pin configuration is possible by combination of existing 6, 12 and 18 pin busbars.
- Power Feeding:  
Power Feed Lug (115A), Direct Power Feed (115A)
- UL listed for Altech’s L-Series of Miniature Circuit Breakers
- UL listed for use with most popular UL489 Miniature Molded Circuit Breakers in the market.

Technical Specifications	Busbars UL489
<b>Material of Busbar</b>	Copper
<b>Material of Insulation (Housing)</b>	Polyamid
<b>Electrical Ratings</b>	115A/480VAC
<b>Short Circuit Withstand Rating</b>	10kA
<b>Applying Standards</b>	UL489, VDE0660 Part 100, IEC60749, DIN EN60947-1

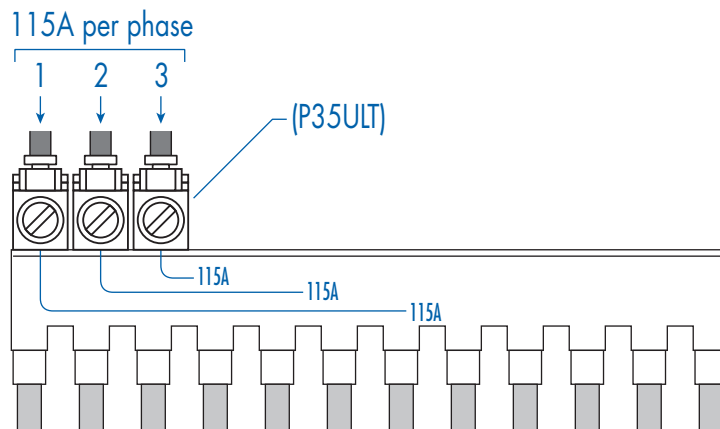
# Altech UL489 Busbar System

## Power Feed Methods

### End Feed Method

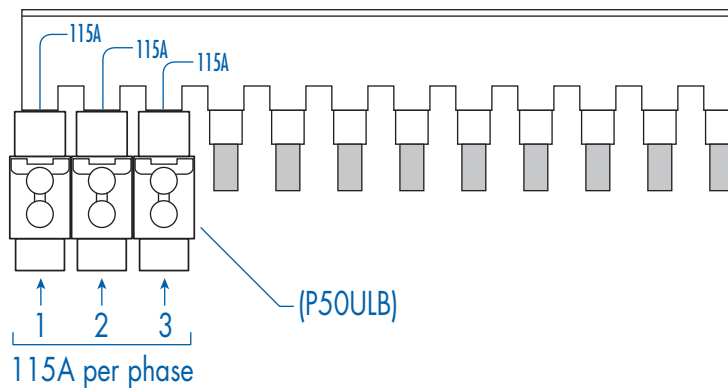
#### P35ULT\*

With the **P35ULT** Power Feed Lug as a Start/End Feeding Device a maximum input current of **115A per Phase** can be achieved.



#### P50ULB\*

With the **P50ULB** Modular Direct Power Feed as a Start/End Feeding Device a maximum input current of **115A per Phase** can be achieved.



\* For complete specifications and description of Feeding Devices see page 19.

# 1 PHASE BUSBAR

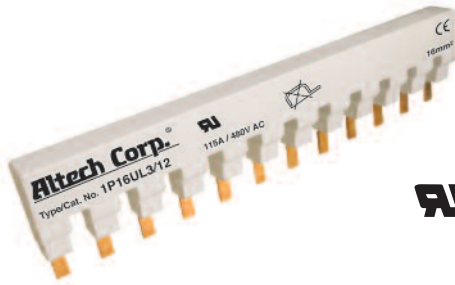
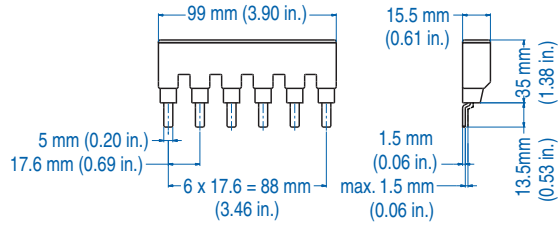
16mm<sup>2</sup> for 115A



UL489 recognized  
E305318

Type/  
Cat. No.                      No. of  
Pins                              Length  
[mm]

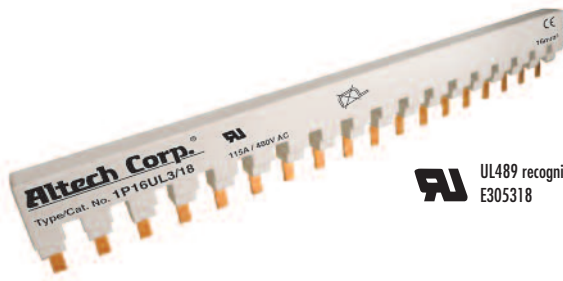
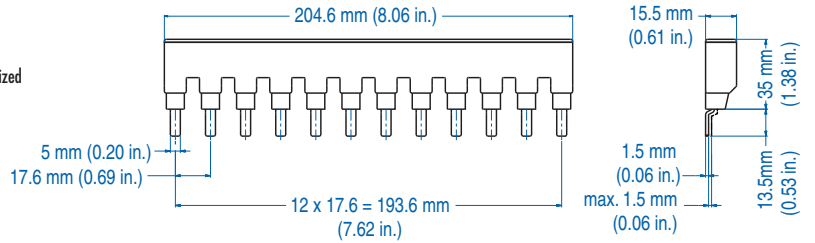
1P16UL3/6                      6                                  99



UL489 recognized  
E305318

Type/  
Cat. No.                      No. of  
Pins                              Length  
[mm]

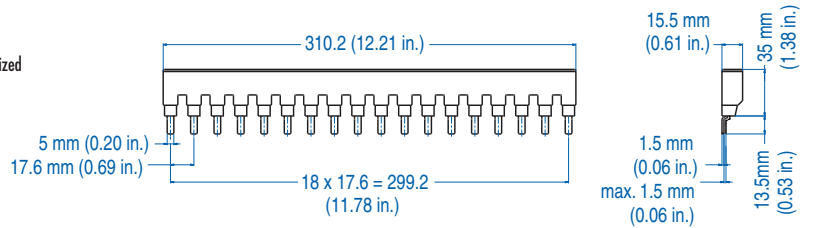
1P16UL3/12                      12                                204.6



UL489 recognized  
E305318

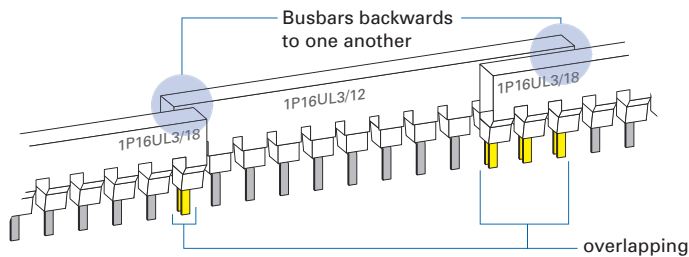
Type/  
Cat. No.                      No. of  
Pins                              Length  
[mm]

1P16UL3/18                      18                                310.2



### Example for different No. of Pins

eg. 44 pins use 1x 1P16UL3/12 + 2x 1P16UL3/18



- No. of overlapping pins of 2 busbars must be a multiplier of the No. of phases
- Overlapping busbars are backwards to each other

## ACCESSORIES



Type/Cat. No:                      **P35ULT**  
Description:                          Power Feed Lug



Type/Cat. No:                      **P50ULB**  
Description:                          Modular Direct Power Feed



Type/Cat. No:                      **BRUL (3 per strip)**  
Description:                          Insulation Cap

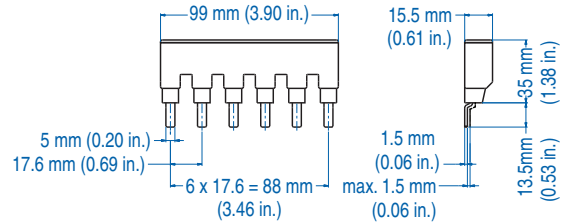


## 2 PHASE BUSBAR

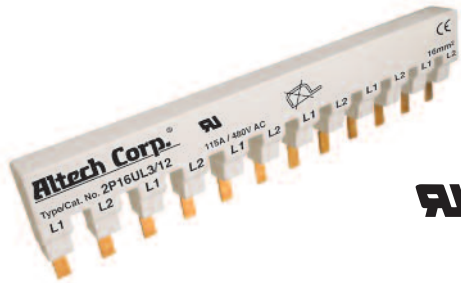
16mm<sup>2</sup> for 115A



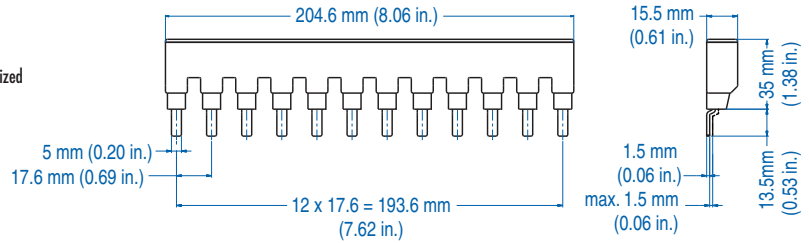
**UL489 recognized**  
E305318



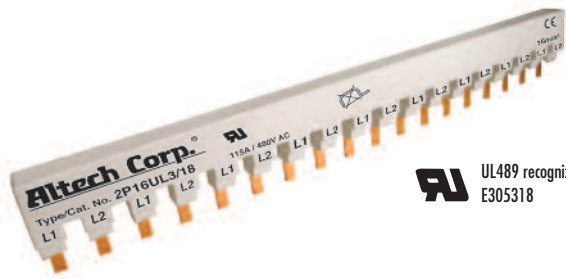
Type/ Cat. No.	No. of Pins	Length [mm]
2P16UL3/6	6	99



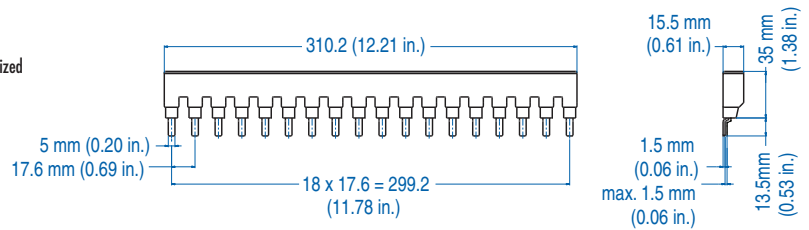
**UL489 recognized**  
E305318



Type/ Cat. No.	No. of Pins	Length [mm]
2P16UL3/12	12	204.6



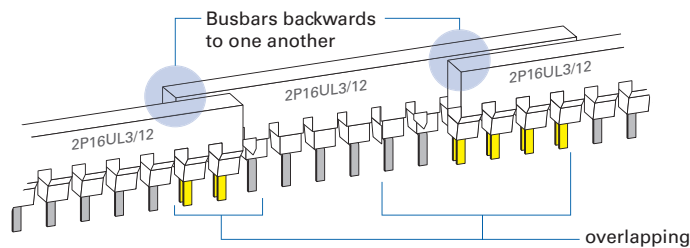
**UL489 recognized**  
E305318



Type/ Cat. No.	No. of Pins	Length [mm]
2P16UL3/18	18	310.2

### Example for different No. of Pins

eg. 30 pins use 3x 2P16UL3/12



- No. of overlapping pins of 2 busbars must be multiplier of the No. of phases
- Overlapping busbars are backwards to each other

## ACCESSORIES



Type/Cat. No: **P35ULT**  
Description: Power Feed Lug



Type/Cat. No: **P50ULB**  
Description: Modular Direct Power Feed



Type/Cat. No: **BRUL (3 per strip)**  
Description: Insulation Cap

# 3 PHASE BUSBAR

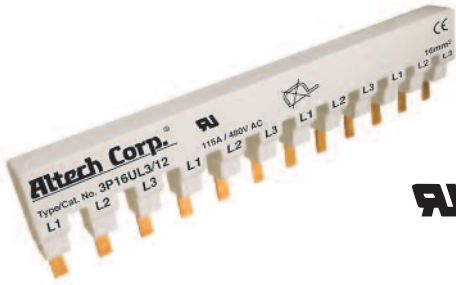
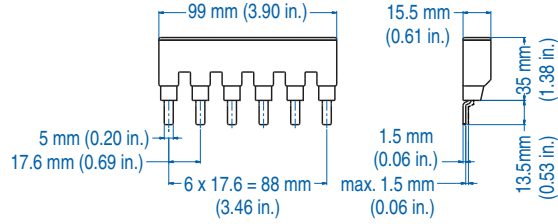
16mm<sup>2</sup> for 115A



**UL489 listed**  
E305318

Type/  
Cat. No.                      No. of  
Pins                              Length  
[mm]

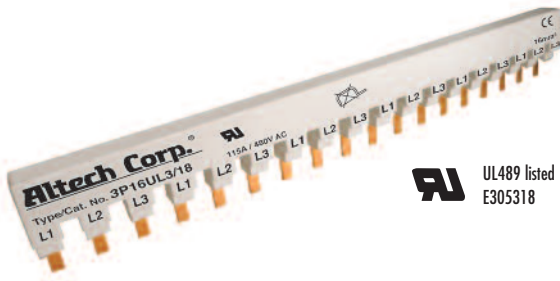
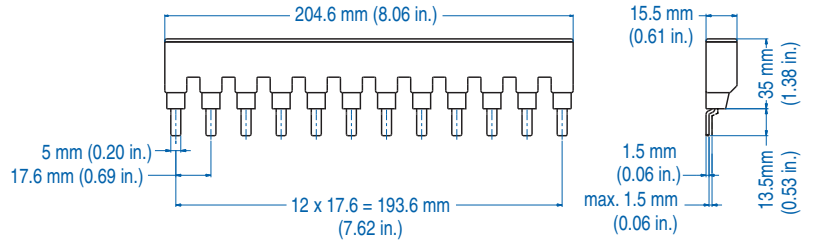
3P16UL3/6                      6                              99



**UL489 listed**  
E305318

Type/  
Cat. No.                      No. of  
Pins                              Length  
[mm]

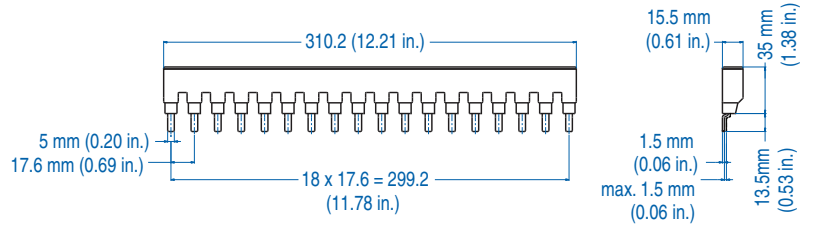
3P16UL3/12                      12                              204.6



**UL489 listed**  
E305318

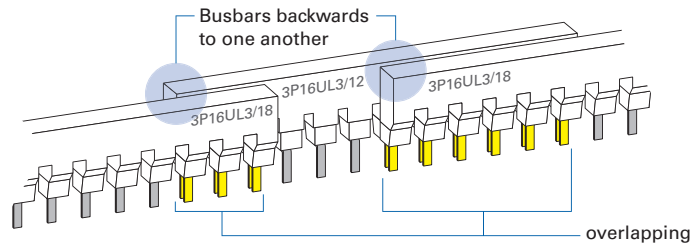
Type/  
Cat. No.                      No. of  
Pins                              Length  
[mm]

3P16UL3/18                      18                              310.2



### Example for different No. of Pins

eg. 39 pins use 1x 3P16UL3/12 + 2x 3P16UL3/18



- No. of overlapping pins of 2 busbars must be multiplier of the No. of phases
- Overlapping busbars are backwards to each other

## ACCESSORIES



Type/Cat. No:                      **P35ULT**  
Description:                      Power Feed Lug



Type/Cat. No:                      **P50ULB**  
Description:                      Modular Direct Power Feed



Type/Cat. No:                      **BRUL (3 per strip)**  
Description:                      Insulation Cap

## Power Feed Devices

Easy connection of power supply wires to the busbar/MCB. Power Feed Devices ensure permanent connection.

### Power Feed Lug



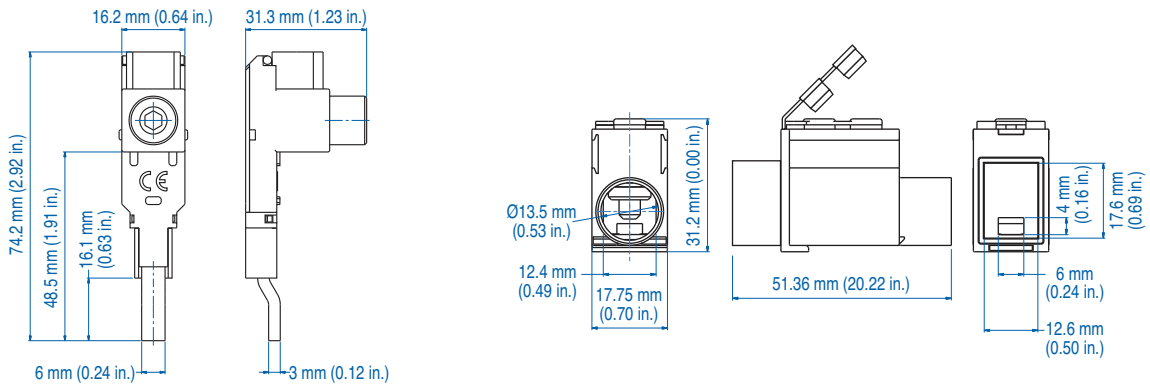
**UL** UL489 listed  
E305318

### Modular Direct Power Feed

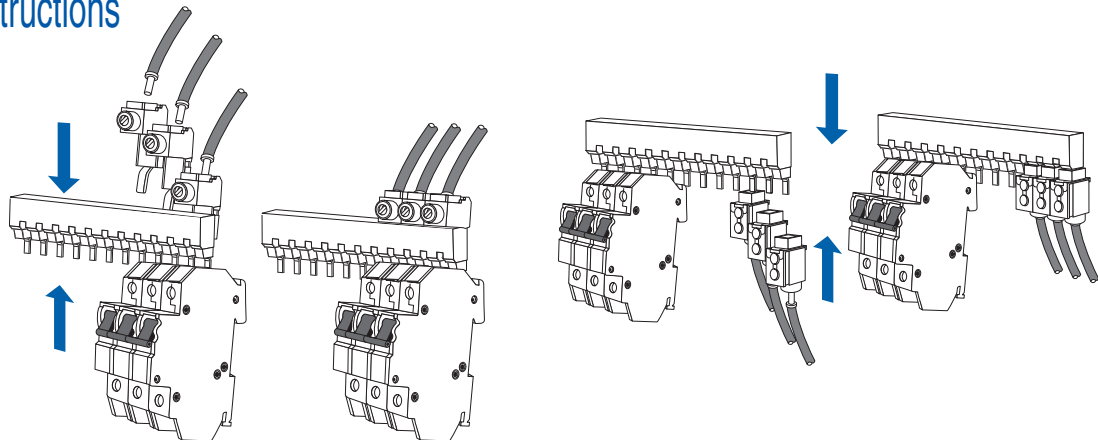


**UL** UL489 listed  
E305318

Type/Cat. No.	P35ULT	P50ULB
Electrical Ratings	115A/480V AC	115A/480V AC
Conductors	75 C°	75 C°
Terminal Site Acceptability	14-2AWG(1.53mm <sup>2</sup> )	14-1AWG(1.5-50mm <sup>2</sup> )
Required Torque	4Nm (35.4 lb. in.)	3.5Nm/31 lb. in. (14-6AWG) 4Nm/35.4 lb. in. (4-1AWG)
Material of Lug	Brass	Brass
Insulation Material	Polyamid	Polyamid
For use with	UL489 1-3 phase Busbar	UL489 1-3 phase Busbar



## Assembly Instructions



## Miscellaneous Accessories

### Insulation Caps



Type/Cat. No:

**BRUL** (3 per strip)

Description:

Insulation Cap

# Altech Busbar Systems

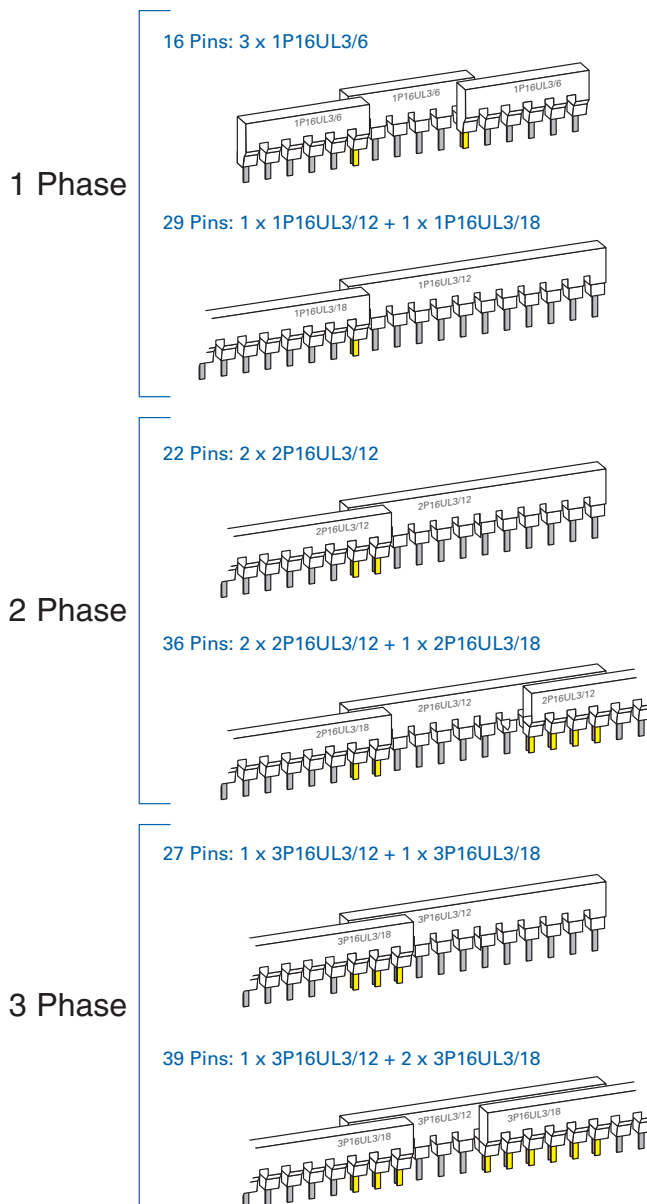
## Configuration and Assembly of UL489 Busbars

UL489 Busbars are available in 3 different Pin Configurations per Phase, (6, 12 and 18 Pins).

The UL489 busbar cannot be cut, since the creepage and clearance distance requirements from UL are too stringent. Therefore, to obtain the desired No. of Pins, Busbar-Pins can be overlapped as explained below:

- 1) Busbars are overlapped backwards to each other. Both Pins of each Busbar fit together in the terminals of the Minature Circuit Breaker.
- 2) The Number of overlapping Pins of 2 Busbar must be a multiplier of the Number of Phases to keep existing Phase sequence. (Can be overlapped by more than the number of phases).
- 3) Any available combination of the 3 different Pin configurations is possible.
- 4) In most cases there is more than 1 combination possible.
- 5) For more possible configurations see Busbar Selection Table on page 21.

### Configuration Examples\*



\*For Questions, other configurations and detailed information please contact Altech Corp.

# Busbar Selection Table

No. of Pins	Necessary Busbars	No. of Pins	Necessary Busbars	No. of Pins	Necessary Busbars	No. of Pins	Necessary Busbars
<b>1 Phase System</b>							
6	1x 1P16UL3/6	27	2x 1P16UL3/18 1x 1P16UL3/12 + 1x 1P16UL3/18	43	1x 1P16UL3/12 + 2x 1P16UL3/18 3x 1P16UL3/18	38	1x 2P16UL3/6 + 2x 2P16UL3/18 3x 2P16UL3/18
7	2x 1P16UL3/6		2x 1P16UL3/6 + 1x 1P16UL3/18	44	1x 1P16UL3/12 + 2x 1P16UL3/18 3x 1P16UL3/18		2x 2P16UL3/12 + 1x 2P16UL3/18 1x 2P16UL3/12 + 2x 2P16UL3/18
8	2x 1P16UL3/6		3x 1P16UL3/12			40	3x 2P16UL3/18 1x 2P16UL3/12 + 2x 2P16UL3/18
9	2x 1P16UL3/6	28	2x 1P16UL3/18 1x 1P16UL3/12 + 1x 1P16UL3/18	45	1x 1P16UL3/12 + 2x 1P16UL3/18 3x 1P16UL3/18		3x 2P16UL3/18 1x 2P16UL3/12 + 2x 2P16UL3/18
10	2x 1P16UL3/6		2x 1P16UL3/6 + 1x 1P16UL3/18	46	1x 1P16UL3/12 + 2x 1P16UL3/18 3x 1P16UL3/18	42	3x 2P16UL3/18 1x 2P16UL3/12 + 2x 2P16UL3/18
11	2x 1P16UL3/6		3x 1P16UL3/12				
12	1x 1P16UL3/12 3x 1P16UL3/6	29	2x 1P16UL3/18 1x 1P16UL3/12 + 1x 1P16UL3/18	47	3x 1P16UL3/18	44	3x 2P16UL3/18 1x 2P16UL3/12 + 2x 2P16UL3/18
13	2x 1P16UL3/12 3x 1P16UL3/6 1x 1P16UL3/6 + 1x 1P16UL3/12	30	2x 1P16UL3/18 3x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/12 + 1x 1P16UL3/18	48	3x 1P16UL3/18	46	3x 2P16UL3/18
14	2x 1P16UL3/12 3x 1P16UL3/6 1x 1P16UL3/6 + 1x 1P16UL3/12			49	3x 1P16UL3/18	48	3x 2P16UL3/18
15	2x 1P16UL3/12 3x 1P16UL3/6 1x 1P16UL3/6 + 1x 1P16UL3/12		2x 1P16UL3/12 + 1x 1P16UL3/18 1x 1P16UL3/12 + 2x 1P16UL3/18	50	3x 1P16UL3/18	50	3x 2P16UL3/18
16	2x 1P16UL3/12 3x 1P16UL3/6 1x 1P16UL3/6 + 1x 1P16UL3/12	31	2x 1P16UL3/18 3x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/12 + 1x 1P16UL3/18	<b>2 Phase System</b>			
17	2x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/12		2x 1P16UL3/12 + 1x 1P16UL3/18 1x 1P16UL3/12 + 2x 1P16UL3/18	6	1x 2P16UL3/6	9	2x 3P16UL3/6
18	1x 1P16UL3/18 2x 1P16UL3/12 2x 1P16UL3/6 + 1x 1P16UL3/12 1x 1P16UL3/6 + 2x 1P16UL3/12	32	2x 1P16UL3/18 3x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/12 + 1x 1P16UL3/18	8	2x 2P16UL3/6	12	1x 3P16UL3/12 3x 3P16UL3/6
19	2x 1P16UL3/12 2x 1P16UL3/18 2x 1P16UL3/6 + 1x 1P16UL3/12 1x 1P16UL3/6 + 2x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/18 1x 1P16UL3/12 + 1x 1P16UL3/18	33	2x 1P16UL3/18 3x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/12 + 1x 1P16UL3/18	10	2x 2P16UL3/6	15	1x 3P16UL3/6 + 1x 3P16UL3/12 2x 3P16UL3/12
20	2x 1P16UL3/12 2x 1P16UL3/18 1x 1P16UL3/6 + 2x 1P16UL3/12 2x 1P16UL3/6 + 1x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/18 1x 1P16UL3/12 + 1x 1P16UL3/18	34	2x 1P16UL3/18 3x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/12 + 1x 1P16UL3/18	12	3x 2P16UL3/6 1x 2P16UL3/12	18	1x 3P16UL3/18 1x 3P16UL3/12 + 2x 3P16UL3/6 2x 3P16UL3/12
21	2x 1P16UL3/12 2x 1P16UL3/18 2x 1P16UL3/6 + 1x 1P16UL3/12 1x 1P16UL3/6 + 2x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/18 1x 1P16UL3/12 + 1x 1P16UL3/18	35	2x 1P16UL3/18 3x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/12 + 1x 1P16UL3/18	14	3x 2P16UL3/6 2x 2P16UL3/12 1x 2P16UL3/6 + 1x 2P16UL3/12	21	2x 3P16UL3/12 1x 3P16UL3/6 + 1x 3P16UL3/18 1x 3P16UL3/12 + 1x 3P16UL3/18 2x 3P16UL3/18
22	2x 1P16UL3/12 2x 1P16UL3/18 2x 1P16UL3/6 + 1x 1P16UL3/12 1x 1P16UL3/6 + 2x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/18 1x 1P16UL3/12 + 1x 1P16UL3/18	36	2x 1P16UL3/18 3x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/12 + 1x 1P16UL3/18	16	2x 2P16UL3/12 1x 2P16UL3/6 + 1x 2P16UL3/12	24	1x 3P16UL3/12 + 1x 3P16UL3/18 2x 3P16UL3/6 + 1x 3P16UL3/18 1x 3P16UL3/6 + 2x 3P16UL3/12 3x 3P16UL3/12 2x 3P16UL3/18
23	2x 1P16UL3/12 2x 1P16UL3/18 1x 1P16UL3/6 + 1x 1P16UL3/18 1x 1P16UL3/12 + 1x 1P16UL3/18	37	2x 1P16UL3/18 3x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/12 + 1x 1P16UL3/18	18	1x 2P16UL3/18 2x 2P16UL3/12 2x 2P16UL3/6 + 1x 2P16UL3/12	27	1x 3P16UL3/12 + 1x 3P16UL3/18 2x 3P16UL3/18 3x 3P16UL3/12
24	2x 1P16UL3/12 2x 1P16UL3/18 1x 1P16UL3/12 + 1x 1P16UL3/18	38	2x 1P16UL3/18 3x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/12 + 1x 1P16UL3/18	20	2x 2P16UL3/6 + 1x 2P16UL3/12 1x 2P16UL3/6 + 1x 2P16UL3/18 2x 2P16UL3/12 2x 2P16UL3/18 1x 2P16UL3/12 + 1x 2P16UL3/18	30	2x 3P16UL3/18 2x 3P16UL3/12 + 1x 3P16UL3/18 3x 3P16UL3/12 1x 3P16UL3/6 + 1x 3P16UL3/12 + 1x 3P16UL3/18
25	2x 1P16UL3/12 2x 1P16UL3/18 1x 1P16UL3/12 + 1x 1P16UL3/18	39	2x 1P16UL3/18 3x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/12 + 1x 1P16UL3/18	22	2x 2P16UL3/12 2x 2P16UL3/18 1x 2P16UL3/6 + 1x 2P16UL3/18 1x 2P16UL3/12 + 1x 2P16UL3/18	33	2x 3P16UL3/18 2x 3P16UL3/12 + 1x 3P16UL3/18
26	2x 1P16UL3/18 1x 1P16UL3/12 + 1x 1P16UL3/18 2x 1P16UL3/6 + 1x 1P16UL3/18 3x 1P16UL3/12	40	2x 1P16UL3/18 3x 1P16UL3/12 1x 1P16UL3/6 + 1x 1P16UL3/12 + 1x 1P16UL3/18	26	2x 2P16UL3/6 + 1x 2P16UL3/18 1x 2P16UL3/6 + 2x 2P16UL3/12 3x 2P16UL3/12 2x 2P16UL3/18 1x 2P16UL3/12 + 1x 2P16UL3/18	36	1x 3P16UL3/6 + 2x 3P16UL3/18 2x 3P16UL3/12 + 1x 3P16UL3/18 1x 3P16UL3/12 + 2x 3P16UL3/18 3x 3P16UL3/18
		41	1x 1P16UL3/12 + 2x 1P16UL3/18 3x 1P16UL3/18	28	3x 2P16UL3/12 2x 2P16UL3/18 1x 2P16UL3/12 + 1x 2P16UL3/18	39	1x 3P16UL3/12 + 2x 3P16UL3/18 3x 3P16UL3/18
		42	1x 1P16UL3/12 + 2x 1P16UL3/18 3x 1P16UL3/18	30	1x 2P16UL3/6 + 1x 2P16UL3/12 + 1x 2P16UL3/18 3x 2P16UL3/12 2x 2P16UL3/12 + 1x 2P16UL3/18 2x 2P16UL3/18	42	1x 3P16UL3/12 + 2x 3P16UL3/18 3x 3P16UL3/18
				32	1x 2P16UL3/6 + 1x 2P16UL3/12 + 1x 2P16UL3/18 3x 2P16UL3/12 2x 2P16UL3/12 + 1x 2P16UL3/18 2x 2P16UL3/18	45	3x 3P16UL3/18
				34	1x 2P16UL3/6 + 1x 2P16UL3/12 + 1x 2P16UL3/18 2x 2P16UL3/12 + 1x 2P16UL3/18 2x 2P16UL3/18	48	3x 3P16UL3/18
				36	1x 2P16UL3/6 + 2x 2P16UL3/18 3x 2P16UL3/18 2x 2P16UL3/12 + 1x 2P16UL3/18 1x 2P16UL3/12 + 2x 2P16UL3/18		

Note: For detailed information and examples see page 20.

## Modular APD System

Altech's modular Power Distribution (APD) System is a new way to simplify existing wiring methods!

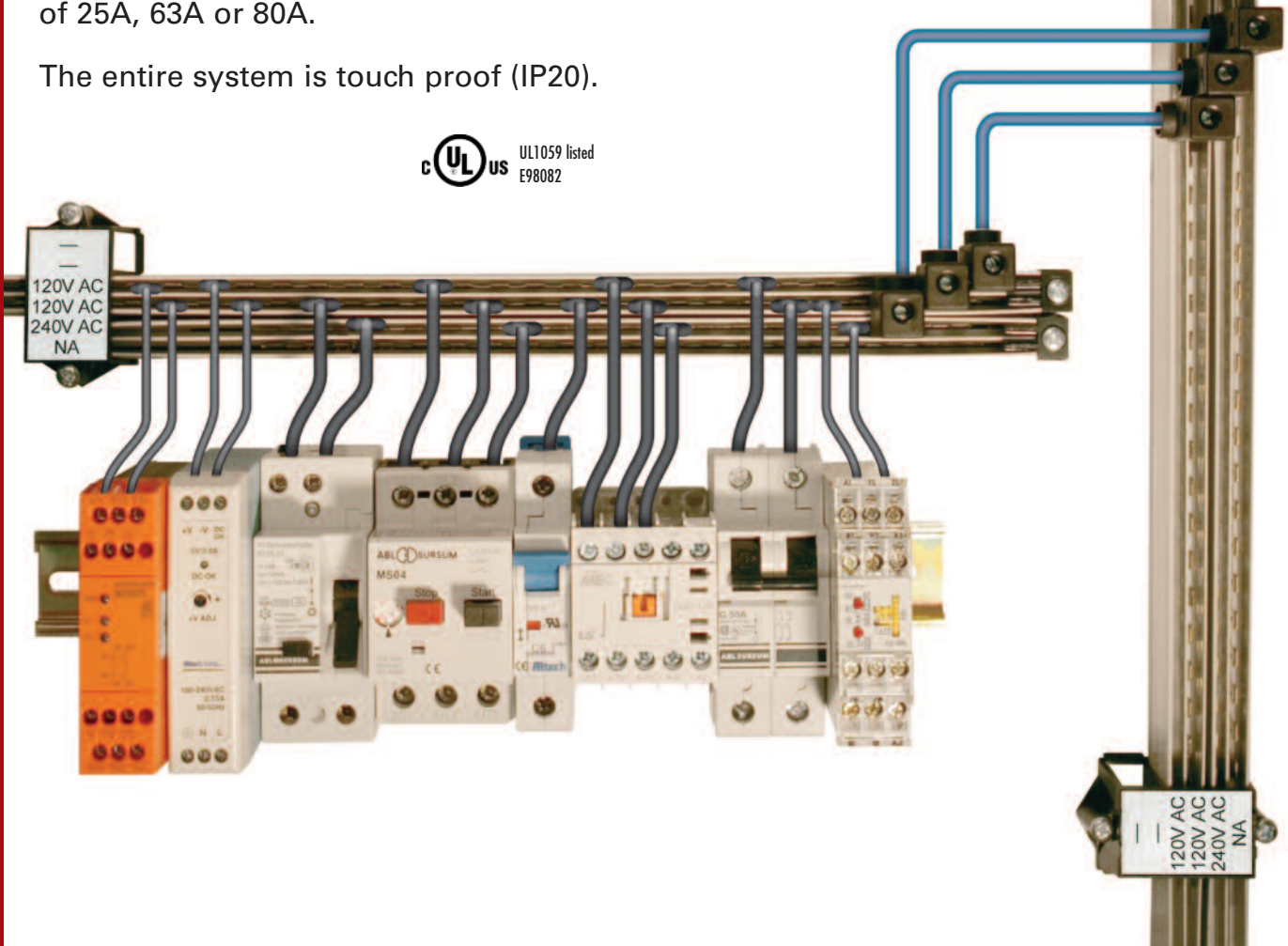
The modular APD system provides flexible solutions for busing common power to many different electrical components. Components can be easily added or removed using quick disconnects saving valuable time and cost during installation and maintenance. The APD system also provides an organized method of wiring, that would simplify the wiring schematics for troubleshooting, while reducing the use of excessive wires and cables.

The APD system allows multiple connections per phase for many applications, such as:

- Supplying separate voltages to auxiliary circuits and control circuits for relays, contactors, timers, etc.
- Supplying power to circuit breakers, motor starters, switches, contactors, etc.

Two conductors are housed within a rigid plastic insulation housing suitable for voltages up to 600VAC. The conductors have current ratings of 25A, 63A or 80A.

The entire system is touch proof (IP20).



# APD BUSBARS

**Specifications:**

APD Busbars are available with 1 or 2 phases, Max. Temperature 158°F (70°C)

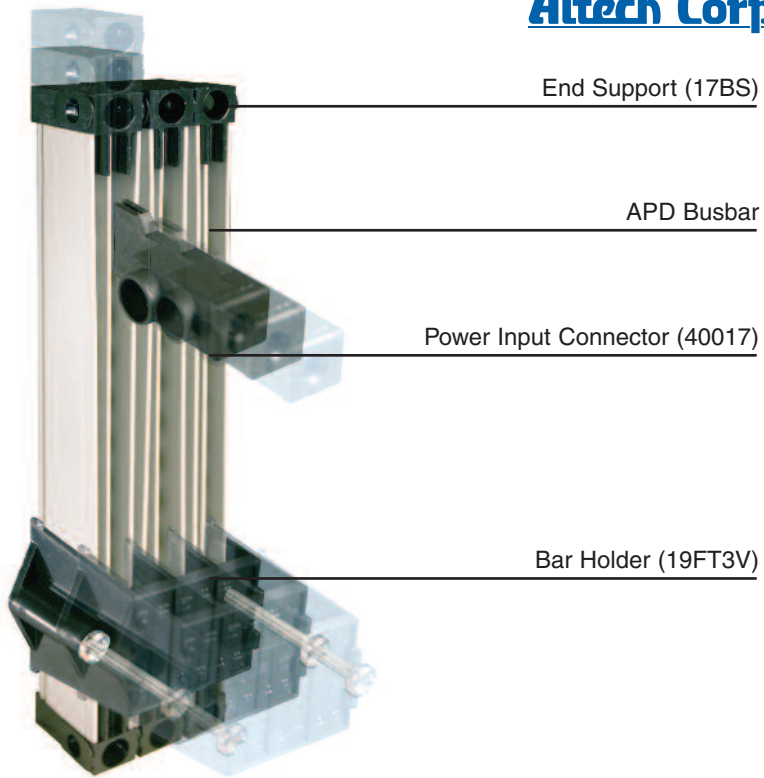
**Material Insulation:**

PVC

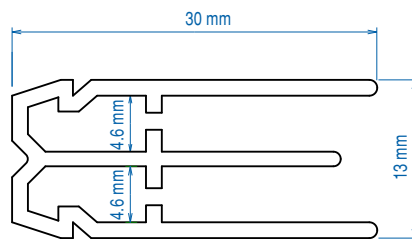
**Length:**

1.9m (6.23 ft.)/ 1.0m (3.281 ft.)

**83 Connections per Meter per Phase**



Electrical Rating (600VAC)	Part No.	Possible Connections / Phase	No. of Phases	Material	Length
25A	1LB158-25A	158	1	Brass	1.9m (6.23 ft.)
25A	2LB158-25A	158	2	Brass	1.9m (6.23 ft.)
25A	1LB83-25A	83	1	Brass	1.0m (3.281 ft.)
25A	2LB83-25A	83	2	Brass	1.0m (3.281 ft.)
63A	1TC158-63A	158	1	Tinned Copper	1.9m (6.23 ft.)
63A	2TC158-63A	158	2	Tinned Copper	1.9m (6.23 ft.)
63A	1TC83-63A	83	1	Tinned Copper	1.0m (3.281 ft.)
63A	2TC83-63A	83	2	Tinned Copper	1.0m (3.281 ft.)
80A	1TC158-80A	158	1	Tinned Copper	1.9m (6.23 ft.)
80A	2TC158-80A	158	2	Tinned Copper	1.9m (6.23 ft.)
80A	1TC83-80A	83	1	Tinned Copper	1.0m (3.281 ft.)
80A	2TC83-80A	83	2	Tinned Copper	1.0m (3.281 ft.)



**Technical Note:**

The standard busbar lengths can be cut to any desirable length. When cutting the busbars remember to cut the conductor 62mm shorter than the insulation to ensure space for the insulation cap (Part No. 17BI0) at each end. This guarantees adequate and required creepage distance (see picture below). If an end support (Part No. 17BS) is used then no insulation cap is needed.



## FIXING AND MOUNTING

### Bar-Holder

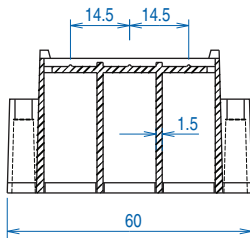


<b>Part No.</b>	<b>19FT3V</b>
<b>Material including</b>	Noryl 2 Screws M4x30mm built-in insulation cap

The holder can accommodate up to 3 Busbars (6 conductor circuits)



Holders should be set approx. every 500mm (19.69 in.). For each Busbar to be fixed cut 2 braces out of the holder, keep the others to assure stability

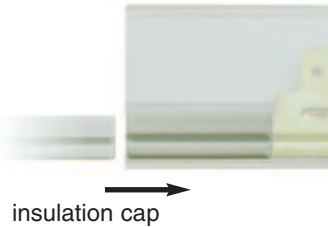


### Insulation Cap



<b>Part No.</b>	<b>17BIO</b>
<b>Material</b>	PVC
<b>Length</b>	30 mm

Slide in insulation cap from the side into insulation.



### Busbar Holder Marking Set

<b>Part No.</b>	<b>17EET</b>
<b>Material</b>	cover -PVC label - Paper



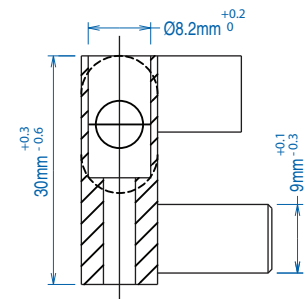
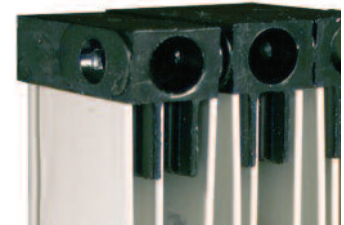
The bar-holder has engraved numerical identification from 1-12. The bar-holder can also accommodate 42x25 mm (1.65 x 0.98 in.) labels and a transparent protection cover. This marking-set is available as part no. 17EET; it contains one label with 6 positions for marking and one transparent cover in PVC.

### End Support

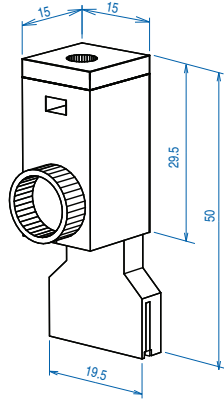


<b>Part No.</b>	<b>17BS</b>
<b>Material including</b>	Noryl Screw M4x25

If an end support is used, no insulation cap (Part No. 17BIO) is necessary





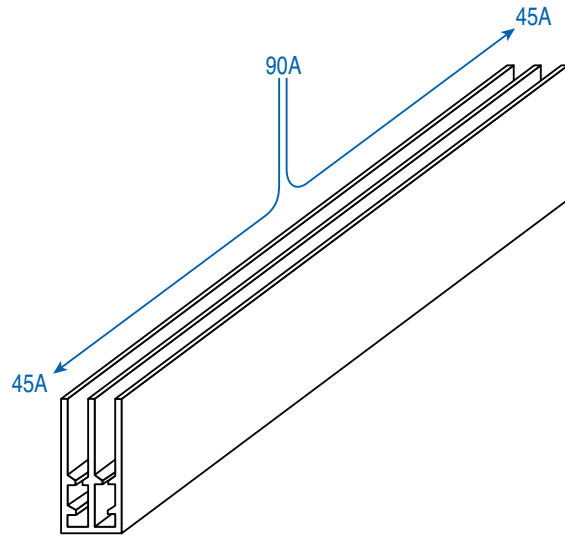


**Power Input Connector**

<b>Part No.</b>	<b>40017</b>
<b>Material Clamp</b>	Copper/Steel
<b>Wire Size</b>	8-2AWG (10-25mm <sup>2</sup> )
<b>Electrical Rating</b>	90A (600V AC/DC)

The Power Input Connector is optional. It can accommodate wires from 8 to 2AWG and is used for circuits up to 90A.

90A can be distributed over a 63A APD Busbar by using the Power Input Connector as a feeder in the center of the busbar.



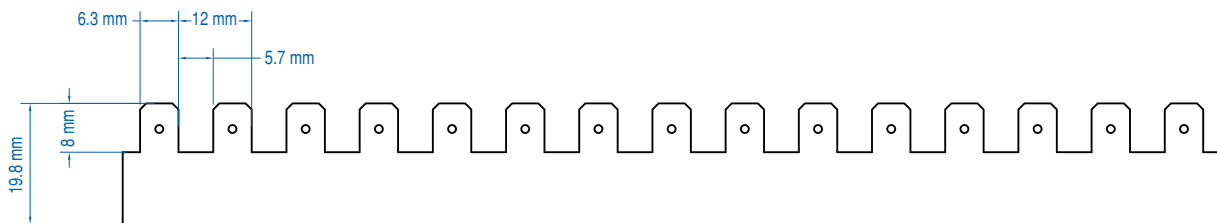
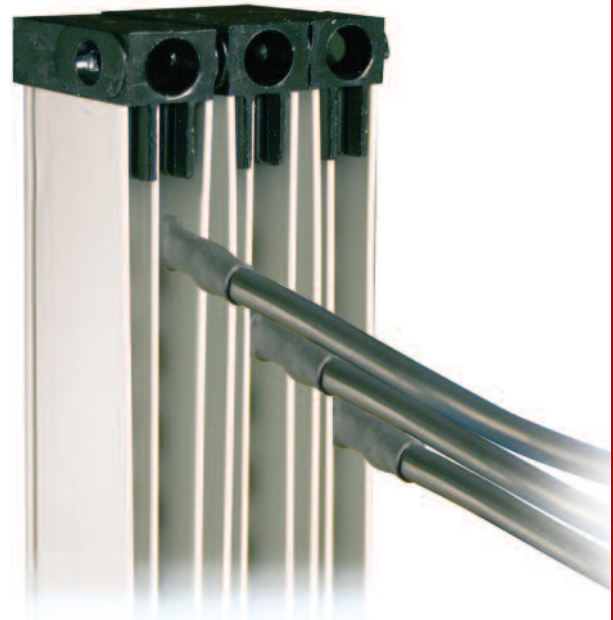
**Note:**  
Standard Female Quick Disconnects (0.250 x 0.032 in.) can be used for power feeding and between-busbar connections of up to 30A. Power Input Connectors (Part No. 40017) are only necessary for currents greater than 30A.

**Connection of Branch Circuits**

The APD Busbar have standard pins (6.3mm x 0.8mm) for female disconnects every 12mm. 83 disconnects are available per meter.

Standard 0.250 in. female disconnects can be used for connections to achieve the following current ratings:

- 30A with 10AWG wire
- 20A with 12AWG wire
- 15A with 14AWG wire
- 10A with 16AWG wire



# ONE PHASE POWER DISTRIBUTION BLOCKS

- Quick mounting and wiring
- IP20 Finger Safe
- DIN Rail or Panel Mount
- Blocks fit with other DIN Rail mountable modular devices (height 95mm, depth 44.5mm)
- Accessories increase the number of outputs with only one input (applies **only** to 38041 and 38032)
- No caps to open or remove
- Material
  - Housing: Polyamide
  - Metal Body: Brass

## 38049



**SCCR: 100kA**

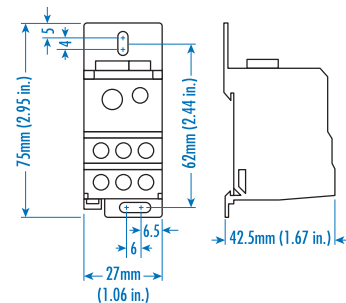
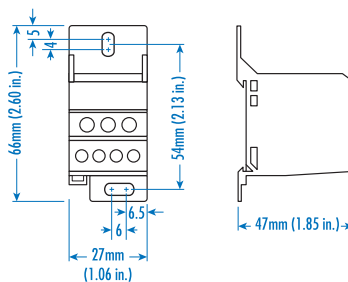
## 38041



**SCCR: 100kA**

Part Number:	<b>38049</b> (UL File E98082)		<b>38041</b> (UL File E98082)	
White	<b>DB16</b> (UL File E220514)		<b>DB35</b> (UL File E220514)	
Gray				
Approvals				
Current Rating	80A		115A 125A	
Voltage Rating	600V AC		600V AC 690V AC	
No. of Inputs	1		1	
Wire Range	8-4 AWG		8-2 AWG	
Torque	13.5lb.-in.		31lb.-in. 40lb.-in. 3.5Nm	
Screw Type	Pozi Drive 2		Pozi Drive 2	
No. of Outputs	6		6	
Wire Range	(2x)8-4 AWG		14-6 AWG	
Torque	13.5lb.-in.		17.5lb.-in. 2Nm	
Wire Range	(4x)14-10 AWG		(4x)2.5-6mm <sup>2</sup>	
Torque	7.2lb.-in.		0.8Nm	
Screw Type	Pozi Drive 2		Pozi Drive 2	
Optional Marking Tag	MT2*		MT2*	
*(for DB16 and DB35)				

Dimensions:



**38041**

Accessories: Fork Type Busbar  
 Part No: **38045** to jump 2 Blocks  
**38046** to jump 8 Blocks  
 can be cut

**38076**



**SCCR: 100kA**

**38032**









**SCCR: 100kA**

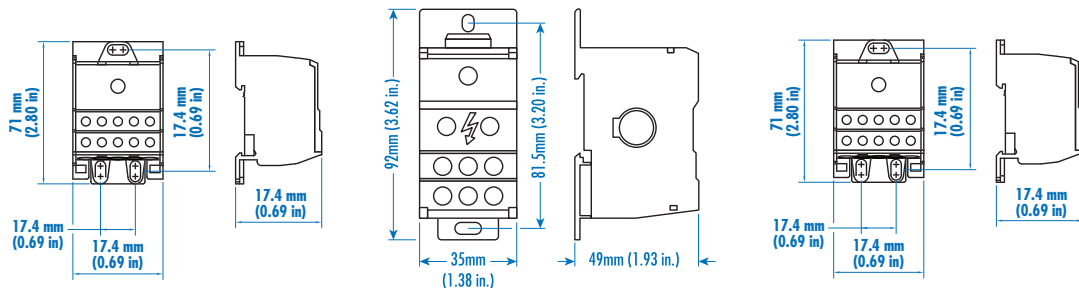
**38074**



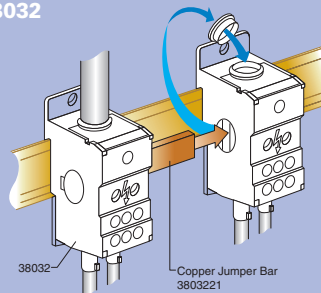
**SCCR: 100kA**

Part Number:	<b>38076</b>		<b>38032</b>		<b>38074</b>		
Approvals	 UL File E98082		 UL File E98082	 C US		 UL File E98082	
Current Rating	115A	125A	160A	160A	175A	175A	
Voltage Rating	600V AC	690V AC	600V AC	690V AC	600V AC	690V AC	
No. of Inputs	1	1	1	1	1	1	
Wire Range	8-2 AWG	10-35mm <sup>2</sup>	8-2/0AWG	10-70mm <sup>2</sup>	6-2/0AWG	16-70mm <sup>2</sup>	
Torque	53lb.-in.	6Nm	35.5lb.-in.	4Nm	53lb.-in.	6Nm	
Screw Type	Hex 4		Hex 5		Hex 5		
No. of Outputs	10	10	6	6	10	10	
Wire Range	14-4 AWG	2.5-16mm <sup>2</sup>	14-6 AWG	2.5-16mm <sup>2</sup>	14-4 AWG	2.5-16mm <sup>2</sup>	
Torque	26.5lb.-in.	3Nm	17.5lb.-in.	2Nm	26.5lb.-in.	3Nm	
Screw Type	Hex 3		Hex 3		Hex 3		

Dimensions:



**38032**



Accessories: Copper Jumper Bar (6x15 mm)

Part No: **3803221** for 2 Blocks  
**3803231** for 3 Blocks  
**3803241** for 4 Blocks  
 can be cut

# ONE PHASE POWER DISTRIBUTION BLOCKS

- Quick mounting and wiring
- IP20 Finger Safe
- DIN Rail or Panel Mount
- Blocks fit with other DIN Rail mountable modular devices (height 95mm, depth 44.5mm)
- Accessories increase the number of outputs with only one input.
- No caps to open or remove
- Material
  - Housing: Polyamide
  - Metal Body: Brass

38020



38019

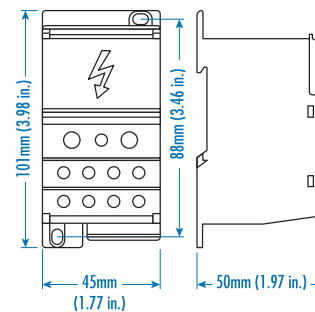
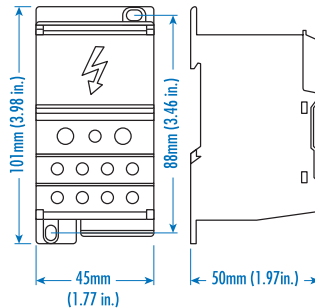


SCCR: 100kA

SCCR: 100kA

Part Number:	38020		38019	
Approvals	 UL File E98082 C US IEC		 UL File E98082 C US IEC	
Current Rating	230A	250A	310A	400A
Voltage Rating	600V AC	690V AC	600V AC	690V AC
No. of Inputs	1	1	1	1
Wire Range	2-4/0AWG	35-120mm <sup>2</sup>	3/0-350kcmil	95-185mm <sup>2</sup>
Torque	170lb.-in.	19Nm	230lb.-in.	25Nm
Screw Type	Hex 6		Hex 8	
No. of Outputs	11	11	11	11
Wire Range	(2x) 14-2AWG	(2x) 2.5-35mm <sup>2</sup>	(2x) 14-2AWG	(2x) 2.5-35mm <sup>2</sup>
Torque	31lb.-in.	3.5Nm	31lb.-in.	3.5Nm
Wire Range	(5x) 14-6AWG	(5x) 2.5-16mm <sup>2</sup>	(5x) 14-6AWG	(5x) 2.5-16mm <sup>2</sup>
Torque	17.5lb.-in.	2Nm	17.5lb.-in.	2Nm
Wire Range	(4x) 14-8AWG	(4x) 2.5-10mm <sup>2</sup>	(4x) 14-8AWG	(4x) 2.5-10mm <sup>2</sup>
Torque	17.5lb.-in.	2Nm	17.5lb.-in.	2Nm
Screw Type	standard screwdriver		standard screwdriver	

Dimensions:







## THREE PHASE POWER DISTRIBUTION BLOCKS

- Quick mounting and wiring
- IP20 Finger Safe
- DIN Rail or Panel Mount
- Blocks fit with other DIN Rail mountable modular devices
- Same compact size for both ratings
- No caps to open or remove
- Material
  - Housing: Polyamide
  - Metal Body: Brass

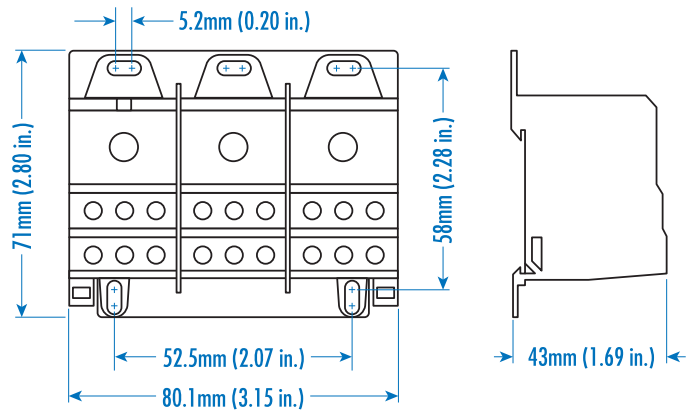


**SCCR: 100kA**

**SCCR: 100kA**

Part Number:	<b>38075</b>		<b>38073</b>	
Approvals	 UL File E98082		 UL File E98082	
Current Rating	115A	115A	175A	175A
Voltage Rating	600V AC	690V AC	600V AC	690V AC
No. of Inputs	3x1	3x1	3x1	3x1
Wire Range	8-2AWG	10-35mm <sup>2</sup>	8-2/0AWG	10-70mm <sup>2</sup>
Torque	31lb.-in.	3.5Nm	35.5lb.-in.	4Nm
Screw Type	Hex 4		Hex 5	
No. of Outputs	3x6	3x6	3x6	3x6
Wire Range	14-4AWG	2.5-16mm <sup>2</sup>	14-4AWG	2.5-16mm <sup>2</sup>
Torque	17.5lb.-in.	2Nm	17.5 lb.-in.	2Nm
Screw Type	Hex 3		Hex 3	

Dimensions:



# SPLICER TERMINAL BLOCKS

- Quick mounting and wiring
- IP20 Finger Safe
- DIN Rail or Panel Mount
- No caps to open or remove
- Material  
Housing: Polyamide  
Metal Body: Aluminum

**38064**



**38057**



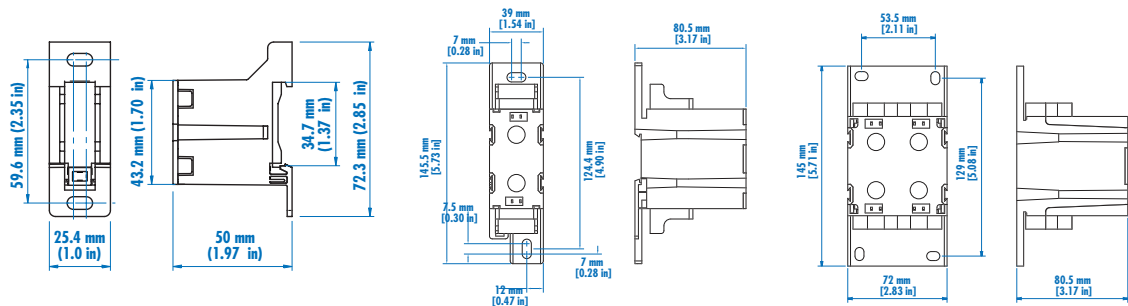
**38059**



Part Number::	38064		38057		38059	
	UL File E98082		UL File E98082		UL File E98082	
Current Rating	175A	175A	400A	400A	800A	800a
Voltage Rating	600V AC	690V AC	600V AC	690V AC	600V AC	690V AC
No. of Inputs	1	1	1	2	2	2
Total Wire Range	14-2/0 AWG	2.5mm <sup>2</sup> -70mm <sup>2</sup>	6 AWG-400kcmil	16mm <sup>2</sup> -185mm <sup>2</sup>	4 AWG-600kcmil	25mm <sup>2</sup> -300mm <sup>2</sup>
Screw Type	Hex 5		Hex 10		Hex 10	
No. of Outputs	1	1	1	1	2	2
Total Wire Range	14-2/0 AWG	2.5mm <sup>2</sup> -70mm <sup>2</sup>	6 AWG-400kcmil	16mm <sup>2</sup> -185mm <sup>2</sup>	4 AWG-600kcmil	25mm <sup>2</sup> -300mm <sup>2</sup>
Screw Type	Hex 5		Hex 10		Hex 10	

### Torque

Wire Range	14-8 AWG	2.5mm <sup>2</sup> -10mm <sup>2</sup>	6-3 AWG	16mm <sup>2</sup> -25mm <sup>2</sup>	4-3 AWG	2	5mm <sup>2</sup>
Torque	35 lb-in	3.9 Nm	130 lb-in	14.7 Nm	130 lb-in	14.7 Nm	14.7 Nm
Wire Range	6-2 AWG	16mm <sup>2</sup> -35mm <sup>2</sup>	2-1/0 AWG	35mm <sup>2</sup> -50mm <sup>2</sup>	2-1/0 AWG	35mm <sup>2</sup> -50mm <sup>2</sup>	35mm <sup>2</sup> -50mm <sup>2</sup>
Torque	80 lb-in	9.0 Nm	170 lb-in	19.2 Nm	170 lb-in	19.2 Nm	19.2 Nm
Wire Range	1-2/0 AWG	50mm <sup>2</sup> -70mm <sup>2</sup>	2/0 AWG-400kcmil	70mm <sup>2</sup> -185mm <sup>2</sup>	2/0 AWG-400kcmil	70mm <sup>2</sup> -185mm <sup>2</sup>	70mm <sup>2</sup> -185mm <sup>2</sup>
Torque	100 lb-in	11.4 Nm	220 lb-in	24.9 Nm	220 lb-in	24.9 Nm	24.9 Nm
Wire Range	-	-	-	-	500-600kcmil	300mm <sup>2</sup> -240mm <sup>2</sup>	300mm <sup>2</sup> -240mm <sup>2</sup>
Torque	-	-	-	-	310 lb-in	35.1 Nm	35.1 Nm



Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
38019	28	1P18U1H/15	7	2P18U3H/38	9	3P18U3/21	10
38020	28	1P18U1H/16	7	2P18U3H/4	9	3P18U3/24	10
38032	27	1P18U1H/17	7	2P18U3H/40	9	3P18U3/27	10
38057	30	1P18U1H/18	7	2P18U3H/42	9	3P18U3/30	10
38059	30	1P18U1H/19	7	2P18U3H/44	9	3P18U3/33	10
38064	30	1P18U1H/2	7	2P18U3H/46	9	3P18U3/36	10
38073	29	1P18U1H/20	7	2P18U3H/48	9	3P18U3/39	10
38074	27	1P18U1H/21	7	2P18U3H/50	9	3P18U3/42	10
38075	29	1P18U1H/22	7	2P18U3H/52	9	3P18U3/45	10
17BIO	24	1P18U1H/23	7	2P18U3H/54	9	3P18U3/48	10
17BS	24	1P18U1H/24	7	2P18U3H/56	9	3P18U3/51	10
17EET	24	1P18U1H/25	7	2P18U3H/6	9	3P18U3/54	10
18/25CAP3P	13	1P18U1H/26	7	2P18U3H/8	9	3P18U3/57	10
19FT3V	24	1P18U1H/27	7	2P25U3/10	8	3P18U3/6	10
1LB41-25A	23	1P18U1H/28	7	2P25U3/12	8	3P18U3/9	10
1LB83-25A	23	1P18U1H/29	7	2P25U3/14	8	3P18U3H/12	11
1P16UL3/12	16	1P18U1H/3	7	2P25U3/16	8	3P18U3H/15	11
1P16UL3/18	16	1P18U1H/30	7	2P25U3/18	8	3P18U3H/18	11
1P16UL3/6	16	1P18U1H/31	7	2P25U3/20	8	3P18U3H/21	11
1P18U1/10	6	1P18U1H/32	7	2P25U3/22	8	3P18U3H/24	11
1P18U1/11	6	1P18U1H/33	7	2P25U3/24	8	3P18U3H/27	11
1P18U1/12	6	1P18U1H/34	7	2P25U3/26	8	3P18U3H/30	11
1P18U1/13	6	1P18U1H/35	7	2P25U3/28	8	3P18U3H/33	11
1P18U1/14	6	1P18U1H/36	7	2P25U3/30	8	3P18U3H/36	11
1P18U1/15	6	1P18U1H/4	7	2P25U3/32	8	3P18U3H/39	11
1P18U1/16	6	1P18U1H/5	7	2P25U3/34	8	3P18U3H/42	11
1P18U1/17	6	1P18U1H/6	7	2P25U3/36	8	3P18U3H/45	11
1P18U1/18	6	1P18U1H/7	7	2P25U3/38	8	3P18U3H/48	11
1P18U1/19	6	1P18U1H/8	7	2P25U3/4	8	3P18U3H/51	11
1P18U1/2	6	1P18U1H/9	7	2P25U3/40	8	3P18U3H/54	11
1P18U1/20	6	1TC41-100A	23	2P25U3/42	8	3P18U3H/57	11
1P18U1/21	6	1TC41-63A	23	2P25U3/44	8	3P18U3H/6	11
1P18U1/22	6	1TC83-100A	23	2P25U3/46	8	3P18U3H/9	11
1P18U1/23	6	1TC83-63A	23	2P25U3/48	8	3P25U3/12	10
1P18U1/24	6	2LB41-25A	23	2P25U3/50	8	3P25U3/15	10
1P18U1/25	6	2LB83-25A	23	2P25U3/52	8	3P25U3/18	10
1P18U1/26	6	2P16UL3/12	17	2P25U3/54	8	3P25U3/21	10
1P18U1/27	6	2P16UL3/18	17	2P25U3/56	8	3P25U3/24	10
1P18U1/28	6	2P16UL3/6	17	2P25U3/6	8	3P25U3/27	10
1P18U1/29	6	2P18U3/10	8	2P25U3/8	8	3P25U3/30	10
1P18U1/3	6	2P18U3/12	8	2P25U3H/10	9	3P25U3/33	10
1P18U1/30	6	2P18U3/14	8	2P25U3H/12	9	3P25U3/36	10
1P18U1/31	6	2P18U3/16	8	2P25U3H/14	9	3P25U3/39	10
1P18U1/32	6	2P18U3/18	8	2P25U3H/16	9	3P25U3/42	10
1P18U1/33	6	2P18U3/20	8	2P25U3H/18	9	3P25U3/45	10
1P18U1/34	6	2P18U3/22	8	2P25U3H/20	9	3P25U3/48	10
1P18U1/35	6	2P18U3/24	8	2P25U3H/22	9	3P25U3/51	10
1P18U1/36	6	2P18U3/26	8	2P25U3H/24	9	3P25U3/54	10
1P18U1/37	6	2P18U3/28	8	2P25U3H/26	9	3P25U3/57	10
1P18U1/38	6	2P18U3/30	8	2P25U3H/28	9	3P25U3/6	10
1P18U1/39	6	2P18U3/32	8	2P25U3H/30	9	3P25U3/9	10
1P18U1/4	6	2P18U3/34	8	2P25U3H/32	9	3P25U3H/12	11
1P18U1/40	6	2P18U3/36	8	2P25U3H/34	9	3P25U3H/15	11
1P18U1/41	6	2P18U3/38	8	2P25U3H/36	9	3P25U3H/18	11
1P18U1/42	6	2P18U3/4	8	2P25U3H/38	9	3P25U3H/21	11
1P18U1/43	6	2P18U3/40	8	2P25U3H/4	9	3P25U3H/24	11
1P18U1/44	6	2P18U3/42	8	2P25U3H/40	9	3P25U3H/27	11
1P18U1/45	6	2P18U3/44	8	2P25U3H/42	9	3P25U3H/30	11
1P18U1/46	6	2P18U3/46	8	2P25U3H/44	9	3P25U3H/33	11
1P18U1/47	6	2P18U3/48	8	2P25U3H/46	9	3P25U3H/36	11
1P18U1/48	6	2P18U3/50	8	2P25U3H/48	9	3P25U3H/39	11
1P18U1/49	6	2P18U3/52	8	2P25U3H/50	9	3P25U3H/42	11
1P18U1/5	6	2P18U3/54	8	2P25U3H/52	9	3P25U3H/45	11
1P18U1/50	6	2P18U3/56	8	2P25U3H/54	9	3P25U3H/48	11
1P18U1/51	6	2P18U3/6	8	2P25U3H/56	9	3P25U3H/51	11
1P18U1/52	6	2P18U3/8	8	2P25U3H/6	9	3P25U3H/54	11
1P18U1/53	6	2P18U3H/10	9	2P25U3H/8	9	3P25U3H/57	11
1P18U1/54	6	2P18U3H/12	9	2TC41-100A	23	3P25U3H/6	11
1P18U1/55	6	2P18U3H/14	9	2TC41-63A	23	3P25U3H/9	11
1P18U1/56	6	2P18U3H/16	9	2TC83-100A	23	400017	25
1P18U1/57	6	2P18U3H/18	9	2TC83-63A	23	BRS5	13
1P18U1/6	6	2P18U3H/20	9	38041	26	BRUL	19
1P18U1/7	6	2P18U3H/22	9	38049	26	DB16	26
1P18U1/8	6	2P18U3H/24	9	38076	27	DB35	26
1P18U1/9	6	2P18U3H/26	9	3P16UL3/12	18	P35ULT	19
1P18U1H/10	7	2P18U3H/28	9	3P16UL3/18	18	P50UB	12
1P18U1H/11	7	2P18U3H/30	9	3P16UL3/6	18	P50ULB	19
1P18U1H/12	7	2P18U3H/32	9	3P18U3/12	10	P50UT	12
1P18U1H/13	7	2P18U3H/34	9	3P18U3/15	10	P95UB	13
1P18U1H/14	7	2P18U3H/36	9	3P18U3/18	10		

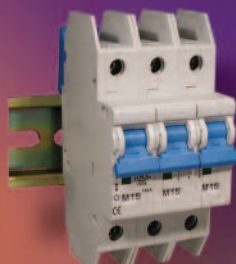
# The Perfect Complement to your Altech Universal Power Distribution Systems ... ... Altech's UL Line of Circuit Protection Devices



**UL1077**



**UL508**



**UL489**

## Sample UL489 Assembly displays:

- 2 UL489 busbars
- 3 three pole UL489 Miniature Molded Case Circuit Breakers
- Power Feed Lugs
- Modular Direct Power Feeds
- Insulation Caps



R-Series  
UL1077 Recognized  
Supplementary Protectors

V-EA Series  
UL508 Manual Motor Controllers  
"Suitable as Motor Disconnect"

L-Series  
AC or DC UL489 Miniature Molded  
Case Circuit Breakers

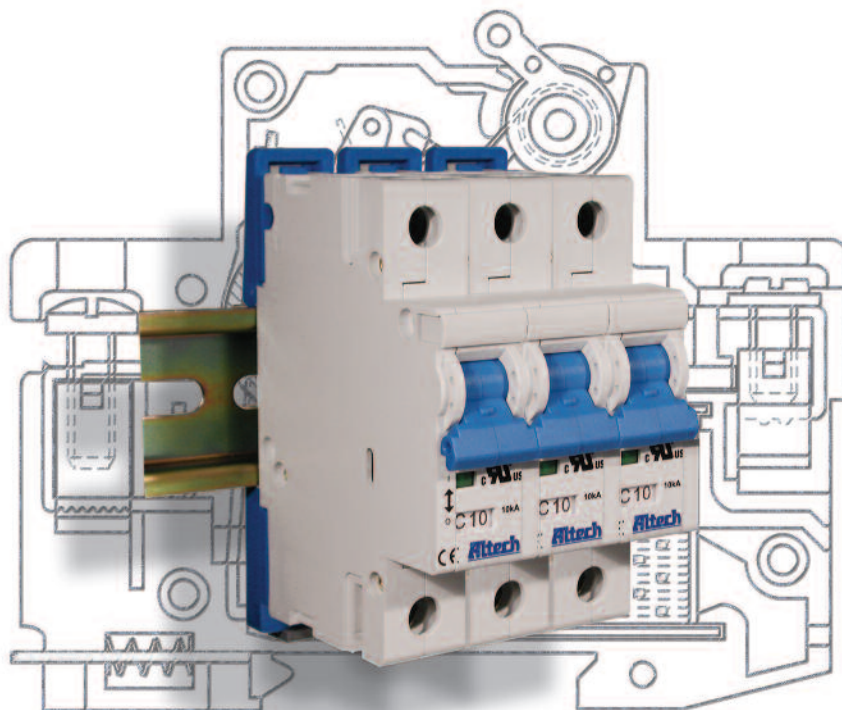


## R-Series



### UL1077 Recognized Supplementary Protector

- DIN Rail Mounted
- 17.5mm width per pole
- Thermal Magnetic
- 480Y/277V AC, 50/60Hz
- 10kA Short Circuit Withstand Capacity
- Positive Trip indicator (Green - off/tripped, Red - on)
- Applications (on the load side of Branch Circuit Protection) include: Sensitive Electronics, Power Supplies, Appliance circuits, etc.



<b>Voltage Rating</b>	480Y/277VAC
<b>Short Circuit Withstand Rating (UL - Ratings)</b>	0.5-6A (RC): 10kA with no back-up fuse 8-63A (RC): 10kA with UL-listed Class J back-up fuse; 5kA with no back-up fuse
<b>Interrupting Capacity (IEC/EN60898/60947-2)</b>	0.5-63A (RC): 10kA

Altech UL1077



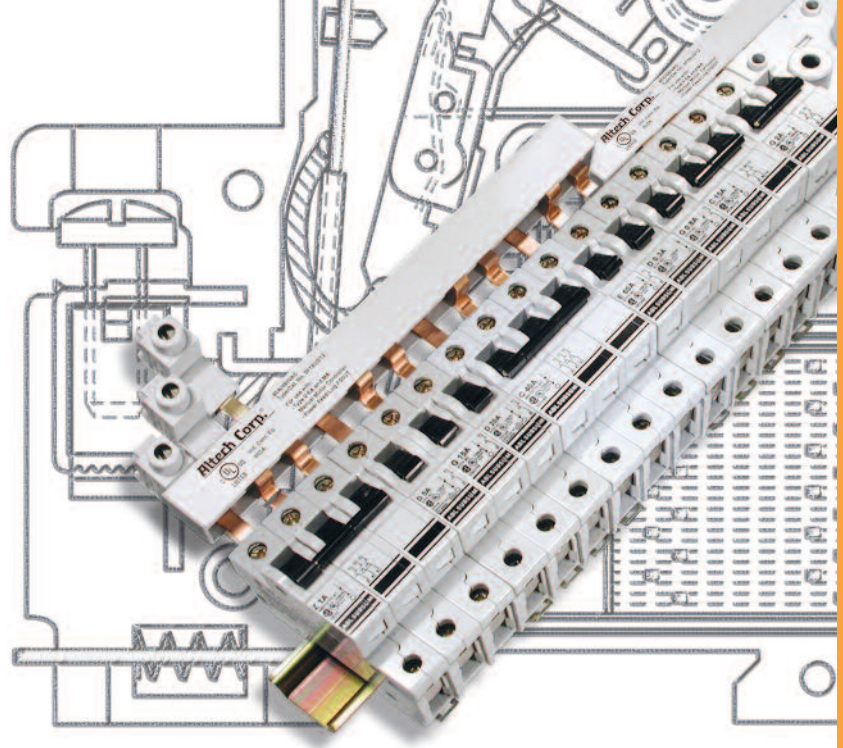
# V-EA Series

**UL** 508 listed  
E137938

**SA** C22.2 No.14 certified  
LR104391

UL508 Listed  
Manual Motor Controller  
“Suitable as Motor Disconnect”

- DIN Rail Mounted
- 17.5mm width per pole
- Thermal Magnetic
- 480Y/277V AC, 50/60Hz
- 10kA Short Circuit Withstand Capacity
- Applications Include:
  - AC Motor Starting, Across the Line
  - AC General Use
  - AC Resistance
  - AC Discharge Lamps (Ballast)
  - AC Incandescent Lamps (Tungsten)



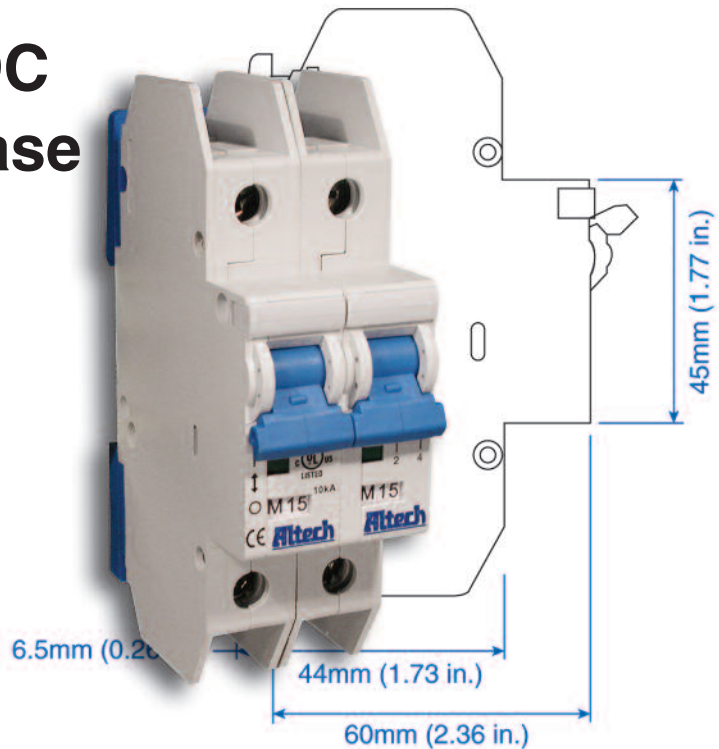
<b>Voltage Rating</b>	480Y/277VAC 0.3-25A: 1 pole - 42VDC; 2 Pole - 80VDC 30-60A: 1 pole - 24VDC; 2 Pole - 60VDC
<b>Short Circuit Withstand Rating (UL/CSA - Ratings)</b>	0.3-60A (RC): 10kA with UL-listed RK5 back-up fuse or MCCB
<b>Group Short Circuit Withstand Rating (UL/CSA - Ratings)</b>	0.3-10A (RC): 10kA; 13-60A (RC): 5kA no branch circuit protection required

# L-Series, AC or DC Miniature Molded Case Circuit Breakers

**UL** US **CE**  
LISTED  
E305318

UL489 Listed Circuit Breakers

- Available in AC and DC models
- DIN Rail Mounted
- 17.5mm width
- Thermal Magnetic
- 240V, 480Y/277V AC, 50/60Hz
- 125VDC (1 pole); 250VDC (2pole)
- 10kA Short Circuit Interrupting Capacity
- Positive Trip indicator (Green - off/tripped, Red - on)
- HACR Type 40°C
- Line/Load reversible



<b>Current/ Voltage Rating</b>	0.2-63A/240VAC, 0.2-32A/480Y/277VAC 0.2-63A/125/250VDC
<b>AC Short Circuit Interrupting Rating</b>	0.2-32A: 1 pole - 10kA@120, 240, 277V; 2-4 poles - 10kA@120, 240V, 480Y/277V; 33-63A: 1-4 poles - 10kA@120, 240V
<b>DC Short Circuit Interrupting Rating</b>	0.2-32A: 1-2 poles - 10kA@125V; 33-63A: 1-2 poles - 10kA@250V

Altech UL508

Altech UL489

## STANDARD TERMS AND CONDITIONS OF SALE

**TITLE** - Title to the products of ALTECH shall remain with ALTECH until payment is made in full by Customer. Such reservation of title is for the purpose of securing the purchase price and shall not relieve Customer of the duty to inspect the products upon receipt, to notify ALTECH of any deficiencies or defects, and to exercise due care in the use, installation, operation, and maintenance of the products when on the premise of the Customer or under the control of the Customer. Notwithstanding any reservation of title by ALTECH, risk of loss shall pass to customer at any time of shipment.

**SHIPMENT AND DELIVERY** - All orders for destination in the mainland United States (less Hawaii, Alaska and non-continental United States possessions) will be shipped F.O.B. Flemington, N.J. All destination, shipping and other charges shall be paid by the Customer in accordance with ALTECH's then current shipping and billing practices.

Delivery dates given in the acceptance of any order are approximate. ALTECH shall not be liable for delays in delivery or in performance due to causes beyond its reasonable control including acts of God, acts of Customer, acts of civil or military authority, fires, strikes or other labor disturbances, war, riot or delays in transportation. In the event of such delay, the date of delivery or performance shall be extended for a period equal to the time lost by reason of the delay.

**PRICE** - PRICES in any ALTECH publication are subject to change without prior notification. Catalog prices are based on prices published in the current price list. All written quotations are valid for thirty (30) days from the date of quotation. Customer shall pay all sales, use, excise or similar taxes whenever ALTECH must itself pay and/or collect such tax from Customer arising out of the sale.

**PAYMENT** - Customer agrees to make payment within thirty (30) days of date of the invoice from ALTECH. Customer agrees to pay a late payment charge of one and one-half percent (1.5% per month, or the maximum late payment charge permitted by applicable law, whichever is less, on any unpaid amount for each calendar month (or fraction thereof) that such payment is in default. Orders amounting to less than 100.00 will be billed at 100.00 plus freight. Full carton purchases are required. In the event of referral to an attorney for collection, reasonable attorney's fees for collection of the overdue amount shall be paid by Customer. In the event payment is not received within 30 days from the date of invoice, any discount shall be cancelled and the full list price will be due.

**LIMITED WARRANTY** - ALTECH warrants to Customer that the equipment purchases shall be free from defects in material and workmanship under normal use and service for a period of one year from shipment.

Written notice as an explanation of the circumstances of any claim that the equipment has proved defective in material or workmanship shall be given promptly by the Customer to ALTECH.

ALTECH will not be liable for any misuse, improper operations, improper installation, improper maintenance, alteration, modification, accident or unusual degradation of the equipment or parts due to an unsuitable installation environment.

No representation of other affirmation of facts, including but not limited to statements regarding capacity, suitability for use or performance of the equipment, shall be or be deemed to be a warranty or representation by ALTECH for any purpose, nor give rise to any liability or obligation of ALTECH whatsoever.

Customer's sole and exclusive remedy in the event of breach of warranty, as set forth herein, is expressly limited to (1) the correction of the defect by adjustment, repair, modification, or replacement, or (2) issuance of a credit or refund of the purchase price for the defective equipment at ALTECH's election and sole expense.

EXCEPT AS SPECIFICALLY PROVIDED IN THIS AGREEMENT, THERE ARE NO OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

THIS WARRANTY EXTENDS ONLY TO THE CUSTOMER FROM ALTECH OR ITS AUTHORIZED DISTRIBUTOR.

**LIMITATION OF LIABILITY** - IN NO EVENT, SHALL ALTECH BE LIABLE FOR LOSS OF PROFITS, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER SIMILAR DAMAGES ARISING OUT OF ANY BREACH OF THIS AGREEMENT OR OBLIGATIONS UNDER THE AGREEMENT.

ALTECH SHALL NOT BE LIABLE FOR ANY DAMAGES CAUSED BY DELAY IN SHIPMENT, INSTALLATION OR FURNISHING OF EQUIPMENT OR SERVICES UNDER THIS AGREEMENT.

No action arising out of any claimed breach of this Agreement may be brought by either party more than two (2) years after the cause of action has accrued.

**PATENT INDEMNITY** - ALTECH shall defend or settle any suit or proceeding brought against Customer based on a claim that any equipment made to ALTECH design and furnished hereunder constitutes an infringement of any existing United States patent, provided (ALTECH) is notified promptly in writing and is given complete authorization and information required for the defense, and ALTECH shall pay all damages and costs awarded against Customer, but shall not be responsible for any costs, expense or compromise incurred or made by Customer without ALTECH's prior written consent. If any equipment is in ALTECH's opinion likely to or does become the subject of a claim for patent infringement, ALTECH may at its option and expense procure for Customer the right to continue using the device, modify it to become non-infringing, but in the event ALTECH is not reasonably able to modify, substitute, or otherwise procure for Customer the right to continue using it, ALTECH will remove such equipment and refund to Customer the amount paid in excess of a reasonable rental for past use.

ALTECH shall not be liable for any infringement or claim based upon use of the equipment in combination with other equipment not supplied by ALTECH or with modifications made by Customer.

The foregoing states the entire liability of ALTECH to Customer arising from patent infringement.

**SELLER'S REMEDIES** - Should Customer fail to make any payment within ten (10) days of its due date, or fail to perform any other of the Customer's obligation hereunder upon thirty (30) days written notice, or should Customer be or become insolvent or be a party to any bankruptcy receivership proceeding prior to full payment of all amounts payable hereunder, ALTECH may: (a) with or without demand or notice to customer declare the entire amount unpaid immediately due and payable; (b) enter upon the premises where the equipment may be found and remove it (Customer shall assemble the equipment and make it available to ALTECH at a place reasonably convenient to both parties and shall permit and assist ALTECH in effecting the retaking and removal of the equipment); and (c) sell any or all the equipment as permitted under applicable law, applying the proceeds of the sale to payment of the expenses of retaking, repairing and selling the equipment, reasonable attorney fees and to the satisfaction of all indebtedness then due and unpaid under this Agreement. Any surplus shall be paid to Customer and any deficiency shall be paid to ALTECH by Customer.

The remedies provided herein shall be cumulative and in addition to all other remedies provided by law or equity or under the Uniform Commercial Code.

**GOVERNING LAW** - This agreement will be governed by the Laws of the State of New Jersey.

**GENERAL** - This Agreement shall only become effective and binding when either (a) it has been accepted and executed by an authorized representative of ALTECH, or (b) the equipment has been shipped to Customer, with or without acceptance in writing hereon. Notice of acceptance is hereby waived by Customer. Customer hereby acknowledges receipt of a true and complete copy hereof.

No addition to or modification of any of the Terms and Conditions of Sale as they appear herein shall be binding upon ALTECH unless signed in writing by duly authorized representative of ALTECH in Flemington, N.J.

Typographical and clerical errors in quotations, orders and acknowledgments are subject to correction.

This Agreement is not assignable without the prior written consent of ALTECH. Any attempt to assign any of the rights, duties or obligations of this Agreement without such consent is void.

If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable, the validity, legality and enforceability, of the remaining provisions shall not in any way be affected or impaired thereby.

ALTECH is not responsible for failure to fulfill its obligation under this Agreement due to causes beyond its control, or except as agreed herein.

THE CUSTOMER ACKNOWLEDGES THAT HE HAS READ THE AGREEMENT, UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS. FURTHERMORE, THE CUSTOMER AGREES THAT IT IS THE COMPLETE AND EXCLUSIVE STATEMENT OF THE AGREEMENT BETWEEN THE PARTIES, WHICH SUPERSEDES ALL PROPOSALS OR PRIOR AGREEMENTS, ORAL OR WRITTEN, EXPRESSED OR IMPLIED, AND ALL OTHER COMMUNICATIONS BETWEEN THE PARTIES RELATING TO THE SUBJECT MATTER OF THIS AGREEMENT.

# Here are other great products available from Altech!

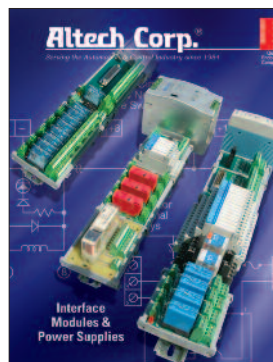
## Circuit Protection Devices



Altech the market leader in UL508 Manual Motor Controllers/ Miniature Circuit Breakers now introduces UL489 Miniature Circuit Breakers and UL1077 Supplementary Protectors. The UL489 versions are DIN rail mounted, 17.5mm wide, thermal magnetic, 240V, 480Y/277V AC, 50/60Hz, 125 and 250 VDC models, with short circuit interrupt capacity of 10kA, a positive trip indicator, and are line/load reversible. The UL1077 versions are DIN rail mounted, 17.5mm wide, thermal magnetic, 480Y/277V AC, 50/60Hz, a short circuit withstand capacity 10kA, have a positive trip indicator.

**Altech Corp.®**  
35 Royal Rd., Flemington, NJ 08822  
908-806-9400  
FAX 908-806-9490  
[www.altechcorp.com](http://www.altechcorp.com)

## Interface Modules and Power Supplies



Altech offers a wide range of DIN Rail or panel mount cable interface modules, relay interface modules, power supplies, carrier modules, and custom designed modules. Cable to connector models include: D-Sub connectors, ribbon cable connectors, and Dip socket connectors to terminals. Standard relay modules from 1 to 16 channels, and safety relay modules from 1 to 16 channels and up to 10 poles are included. The catalog also contains switching power supplies, linear power supplies, and custom designed interface modules.

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FAX 908-806-9490  
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## Contactors and More!



Altech's now carries contactors, mini contactors, definite purpose contactors & overload relays. The contactors come in 3 and 4 pole configurations at 9A to 800A. Available in Single Phase (115 -230V) and Three Phase (200 - 575V) AC and DC models. A large variety of coil voltages are supported and the accessories are auxiliary contacts and overload relays. The mini contactors come in screw clamp, fast-on, cage clamp and solder pin types.

**Altech Corp.®**  
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908-806-9400  
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## Terminal Blocks



Altech offers a NEW Terminal Block catalog with the most competitively priced blocks in the industry. We feature screw and spring clamp models for DIN rail and panel mount applications. This advanced line of wire termination products will increase your design options and help to get the job done more efficiently. Our line of blocks include feed-through (single, double or triple level), distribution, ground, fuse, disconnect, thermocouple, surge suppressor and indicator. A wide variety of accessories, tools and ferrules are available.

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## Industrial Enclosures



Altech's expanded line of TK Industrial Enclosures, with metric knockouts, is here. Now our entire line of industrial enclosures is in metric. Metric knockouts align with international standards making selection easier and more universal. Plus the PG standard is still available. All of Altech's enclosures are internationally accepted and stand up to the harshest environments. They protect against dust, water and corrosion while enhancing the value of your product. Rated up to IP66 (NEMA type 4x), Altech enclosures are available in a wide range of sizes.

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## Liquid Tight Strain Reliefs



This 64-page catalog introduces Altech's full line Liquid Tight Strain Reliefs (Cord Grips) which are used to seal cable entries, keep contaminant's from entering enclosures, provide strain relief and thus reduce stress on components and termination points inside enclosures. Available in standard, high-performance, and economy versions, functions include Straight-Through, Increased Strain Relief, Bend Protection, Pull/Bend Protection, Multi-conductor, Flat Cable and EMI/RFI. They can be used with almost any type of cable, cord or conductor - solid, stranded, flat, shielded, high temperature, etc.

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## DIN Rail Power Supplies



Altech DIN RAIL mountable power supplies have Universal AC input. They are suitable for industrial and automation applications.

- UL508 Listed
- Installed on DIN rail TS35/ 7.5 or 15
- Available from 30-960W
- Protections: Short circuit / Overload / Over-voltage / Over temperature
- Cooling by free air convection
- Worldwide approvals
- 3 year warranty

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## Motor Disconnect Switches



Altech's line of Motor Disconnect Switches are UL 508 listed as Manual Motor Controllers for AC Motor Starting Across-the-line and AC General use. This new 16 page catalog includes the 3 different handle designs, which are all available in gray/black or yellow/red housings. Electrical ratings are 25-150A / 600V. The switches are non-fused DIN Rail mountable. Neat features include: snap-on auxiliary switches, door mounting kit and a retrofit 30A fuse holder. Also featured are Enclosed Motor Disconnect Switches & Fused Enclosed Motor Disconnect Switch (30A) in plastic or stainless housings.

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Inductive  
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### Enclosures



Industrial  
Enclosures



DIN  
Enclosures

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Modules



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Relays



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Relays

### Power Supplies



Power  
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### DIN Rail



DIN  
Rail

### Wire & Cable Management



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Strain Reliefs/  
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Wire Duct

### Terminal Blocks



Din Rail  
Terminal  
Blocks



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Terminal  
Blocks



Printed Circuit  
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Blocks



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Ferrules



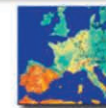
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