

Combination Starters

Interruption Capacity

MBS32- to 100kA (up to 13A)

MBS63- to 65kA (up to 63A)



ENCLOSED TYPE

AEG COMBINATION CONTROLS

Full Line of Field Kit Accessories

- Auxiliary Switch
- Alarm / Auxiliary Switch
- Shunt Trip
- Under Voltage Release
- Short Circuit Alarm Contact
- Enclosures
- Pilot Lights
- Line Buss Bars



COMPLETE

AEG

COMBINATION STARTER SERIES

Breaker Combinations: cUL

* Type MBS32 and MBS63

Conformity to Standards:

UL508E cULus (MBS Type)

AEG Type MBS Combinations
Meet the NEW UL508 Type E
Requirement for

Self Protected Combination
Controllers

&

Meets UL508E (Type 2 Coordination)

NEMA RATED CONTACTORS

CE cULus

AEG

AEG Motor Circuit Protectors FEATURES & BENEFITS MBS32 / MBS63	<i>Page</i> 100-104	MBS32 / 63 APPLICATION & USES	<i>Pages</i> 100-102
Applications & Technical Data	<i>Page</i> 100-102	Old Way / New Way Installations	<i>Page</i> 101
<i>Rocker Lever Design</i>  <p>Mbs32 - 22kA Standard breaking capacity 32 Amp MBS32 SG to 20HP 460V</p>	<i>Pages</i> 105	 <p>External handle operator IP55 Rain Tight Dust Tight</p>	<i>Page</i> 112
<i>Rotary Lever Design</i>  <p>Mbs32 - 50kA High breaking capacity 32 Amp MBS32 HG to 20HP 460V</p>	<i>Pages</i> 105	 <p>Combination Starters to 40HP 460V</p> <p>OPEN ENCLOSED</p>	<i>Pages</i> 114,115
<i>Rotary Lever Design</i>  <p>Mbs63 - 50kA High breaking capacity 63 Amp MBS63 HG to 40HP 460V</p>	<i>Pages</i> 107	ACCESSORIES  <p>Enclosures Contact Blocks</p>	<i>Pages</i> 108, 115
 <p>Best Buy</p> <p>Economical 25 Amp MCP, MBS25 5000 Amp I.C. Manual Starter to 15HP 460V</p> <p>New LOWER List Prices!</p>	<i>Pages</i> 95, 90	 <p>Combination Connections Components Enclosure Accessories</p> <p>Busbar Systems</p>	

Design Features

- cUL_{us} / UL 508, 508E & UL508 Type E Listed
- Class 10 Overload Trip
- Adjustable Thermal Protection 0-63 Amps
- Ambient temperature compensated (-20°C - +60°C) - 4.0°F - +140°F
- Common Accessories for MBS32 & MBS63 Motor Switches
- Single phase sensitivity
- Short circuit protection (50kA)
- Tamper Proof - Cover over adjustment dial
- Identification marker plate



- 50kA - IC MBS32HG / MBS63HG
- Finger Safe Pressure Wire screw terminals
- Front & Side Mount Auxiliaries
- Clear indication (OFF/TRIP/ON) Operator handle
- Padlockable OFF Operator (Lockout / Tagout) Safety Requirement
- Test Trip Function
- 35mm Din rail mount or Screw Mount
- Type 2 Coordination

Enclosure Accessories for MBS32 SG Models ONLY.



Padlocking device up to 3 padlocks

Catalog Number: **MID**

Pilot Light Kits



Catalog Number: **MI55**
Surface Mount

MIT55
Flush Mount

Emergency mushroom pushbutton kits



Momentary P/N (MIPM)



Maintained Twist Release P/N (MIPL)



Maintained Key Release P/N (MIPK)

Catalog Number:

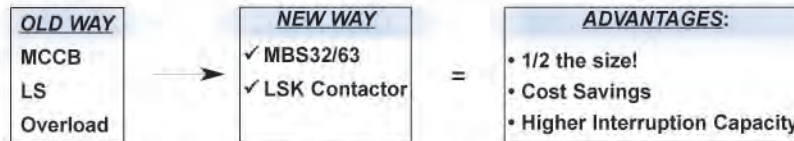
MIPM / MIPL / MIPK

IP55

Water-tight, Dust-tight Enclosure used for NEMA 1,3R & 12 applications

See page 105, 107 for ordering details.

MBS32 / MBS63 AEG Combination Motor Controllers



- 1) As of July 2001, UL's new "Self Protected Combination Controller" approval takes effect (Per UL 508 Type E)
- 2) AEG's type MBS32/63 is UL 508 Type E approved, which permits their use per NEC Code 430-52 in place of the Circuit Breakers or a Fusible Disconnect.
- 3) The new UL 508 Type E approved AEG Self Protected Combination Controller does not require the UL 489 breaker or extra overload relay! Tremendous product and space savings result!

AEG Combinations, type MBS32/63, are approved as combination starters per UL 508E. (Type 2 Coordination)

Description

AEG MBS32 / MBS63 Series Motor Circuit Controllers offer a complete line of compact, reliable and easy to install Protection Solutions. The MBS Controllers are 100% factory calibrated for precise adjustable current ranges from (0.1 - 63 Amps) in two frame sizes. Both frame sizes, MBS32 and 63 also include magnetic/s instantaneous short circuit protection.



The "MBS32 CS" - Combination (Rocker lever design)
With a "standard" interruption capacity of 22kA @ 480V.



The "MBS32 CH" - Combination (Rotary lever design)
With a "high" interruption capacity of 50kA @ 480V.

Rating

The MBS32 is available in the current range of 0.1 - 32 Amps with compact 1^{3/4}" (45mm) width and the MBS63, with the current range of 6.3 - 63Amps, has 2^{1/8}" (55mm) width. For application versatility & users preference, the "MBS32" version is designed with two operator options. One type is the rocker lever design, the other is a rotary design (seen to left of page).

Accessories

The unique design of MBS32/MBS63 Motor Circuit Controllers have many common accessory kits that work with both MBS32 & MBS63 models. This reduces the need for additional inventory and saves additional costs.

The accessories include:

- **Front & Side Mount Auxiliaries**
(Flexibility to meet space requirement)
- **Alarm Contacts**
(Short circuit with reset indicator aux/alarm & overload alarm)
- **Shunt Trip**
(For remote trip requirements)
- **Undervoltage Trip**
(For safety measures, no dangerous automatic restarts when power comes back on)



Combination with contactor
Type 2 Coordination

General Applications

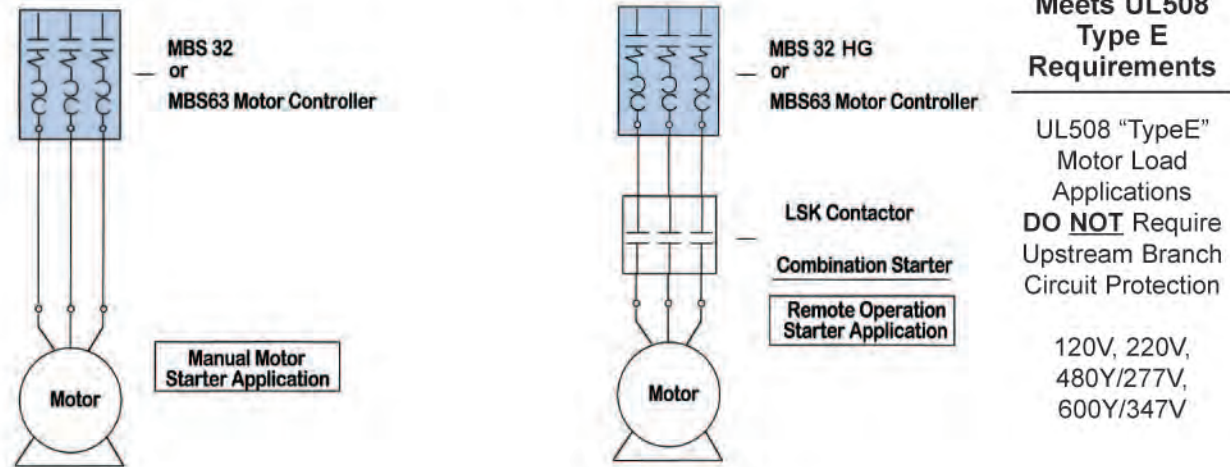
- Combination Controller (*self protected*)
- Manual Motor Controller
- Group Installed Controller

Specific Additional Applications

- Type 2 Coordination - IEC / EN60947-4-1
- Disconnects
- Main Switch
- Circuit Breaker (IEC 947-2)

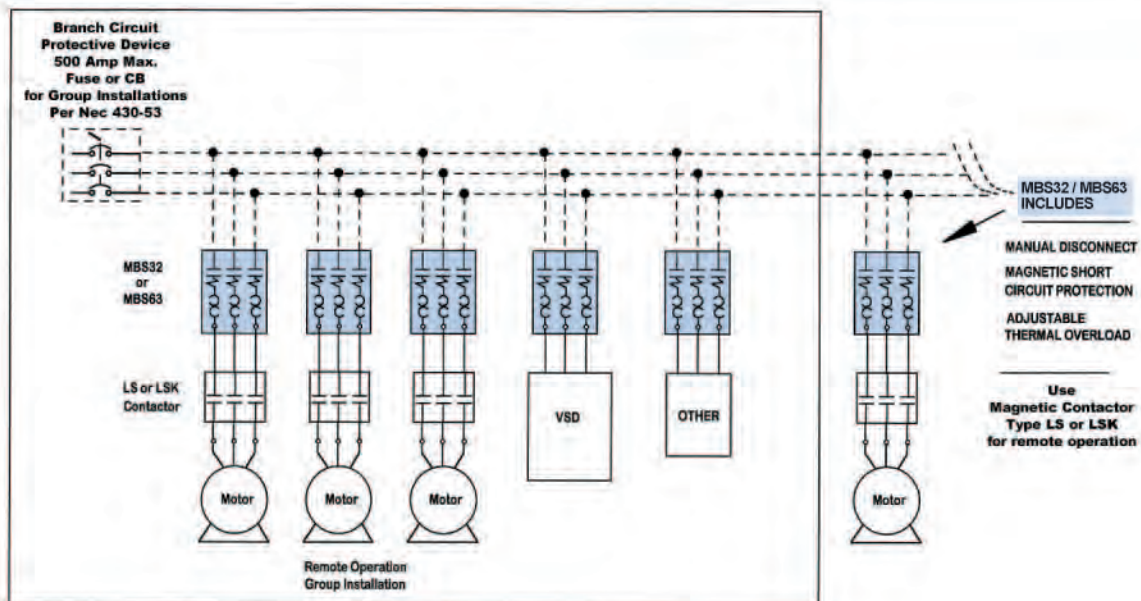
INDIVIDUAL INSTALLATIONS

UL The MBS Motor Circuit Protector provides a "Disconnecting Means" with "Short Circuit Protection" and adjustable thermal overload protection. The MBS32 / MBS63 are cost effective, compact and easy to install. Typical "Individual Installations" are shown below.



The MBS32 / MBS63 Motor Protectors are an "excellent" choice for ALL TYPES Protector Applications. They are also UL Listed as for use in Group Motor Installations Typical Group Installations shown below:

GROUP INSTALLATIONS



Save on Panel Space, Component Costs, Wiring and Mounting Time
Applications Include: Pumps, Compressors, Multi Motor Machinery such as
Conveyors, Machine Tools, Textile and Packaging Equipment

INTERNATIONAL *Technical Specifications*

Frame size	MBS32	MBS63
Rated insulation voltage U_i	690V	100V
Rated operating voltage U_e	690V	690V
Rated impulse withstand strength U_{imp}	8kV	8kV
Rated frequency	50/60Hz	50/60Hz
Total power loss P (W)	0.16 to 25A 7W 32A 8.5W	up to 32A 11W 40A to 50A 15W 63A 17W
Utilization category:		
IEC 947-2 (Circuit Breaker)	Cat. A	Cat. A
IEC 947-4-1 (Motor starter)	AC3	AC3
Mechanical operation performance	100,000 (70,000 for 32A)	50,000
Electrical operation performance	100,000 (70,000 for 32A)	25,000
Max. operations per hour (motor start-up)	25	25
Ambient conditions:		
Storage temperature	-40°C to +80°C	-40°C to +80°C
Operation temperature	-25°C to +60°C	-25°C to +60°C
Temperature compensation	-20°C to +60°C	-20°C to +60°C
Ambient temperature compensation	yes	yes
Operational altitude	up to 2000m	bis 2000m
Shock resistance (IEC 68)	30g (width 20ms)	30g (width 20ms)
Vibration resistance	8g (5 to 150Hz)	8g (5 to 150Hz)
Shock-hazard protection (acc.DIN VDE 0106)	safe from finger touch	safe from finger touch
Protection degree (acc.to IEC529)	IP20	IP10 (IP20 with MAPTP63)
Rated current I_e	to 32A	up to 63A
Overload protection	IEC 947-4-1	IEC 947-4-1
Phase failure protection	yes	yes
Tripping class	10	10
Magnetic release (factory set)	13 x lemax	13 x lemax
Test trip button	yes	yes
Standards & Approvals		
IEC 947-1 / -2 / -4-1	yes	yes
DIN VDE 0660T 100 / 101 / 102	yes	yes
UL508	yes	yes
CE	yes	yes
cUL	yes	yes
D / S / N / Fi	Pending	-
Shipboard Approval	Pending	Pending
PTB test	Pending	Pending

Mounting data

Terminal capacity:		
Solid or stranded without end sleeve	1 x 1...10mm ² 2 x 1...6mm ²	1 or 2 x 1...25mm ²
Stranded with end sleeve	1 or 2 x 1...6mm ²	1 x 1...25mm ² / 2 x 1...16mm ²
AWG	1 x 18...8 / 2 x 18...10	1 x 18...2 / 2 x 18...4
Operating mechanism lockable in OFF position diameter (mm)	3.5 to 4.5	3.5 to 4.5
Terminal type	screw	box
Tightening torque	2 Nm / 18Lb.in	5 Nm / 45Lb.in
Screwdriver	Pz2 / slotted combination	Pz2 / slotted combination
Mounting:		
DIN-rail	yes	yes
Screws	no	yes
Operating position:		
turning to the front	30°	30°
turning to the back	90°	90°
turning to both sides	180°	180°
Handle operation	Rocker level / Rotary drive	Rotary drive
Dimensions		
width (mm)	45	55
height (mm)	90	120
depth (mm)	(M(b)s32*SG) 75 / 92.5 (M(b)s32*HG)	107.5

MBS32



MBS32 HG
High Interruption



MBS32 SG
Standard Interruption

Standards / Approvals



Certified Test Lab Approvals
UL508, 508E and 508 Type E
IEC 60947-1, 60947-2, 60947-4-1
DIN VDE 0600T 100/101/102
Shipboard approvals (on request)

Type 2 coordination per IEC
947-4-1 when used with Type LS or
LSK Series Contactors

Thermal and magnetic protection

Features

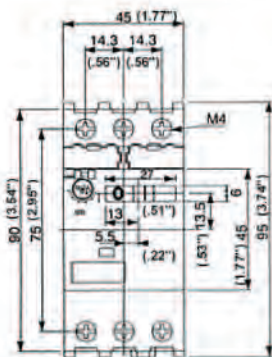
- Standard (22kA) & High Interruption Version (50kA)
(up to 100kA IC for units to 13Amps)
- Current Range 0.1 - 32Amp
- Thermal and Magnetic Protection
- Standard and High Breaking Capacity
- Visible Trip Condition (ON-OFF-Tripped)
- Common Accessories for both MBS32 / MBS63
- Rocker and Rotary Handle Operators
- Ambient Temperature Compensation (-20°C — +60°C)
(-4°F — +140°F)
- Single Phase Sensitivity
- 35mm Din Rail or Screw Mount

Technical performances

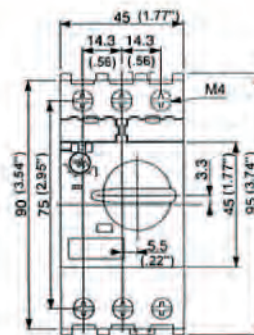
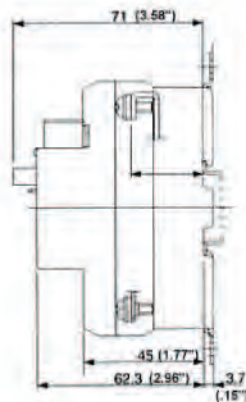
Range

- | | |
|---|---------------|
| • Rated current adjustable | 0.1-32A |
| • Rated operational current | 0.1-32A |
| • Utilization category | |
| IEC 60947-2 (Circuit Breaker) | |
| IEC 60947-4-1 (MMS) | |
| • Tripping Class 10 Overload | |
| • Magnetic release - -13x max amp setting | |
| • Mechanical/electrical endurance | 100,000 oper. |

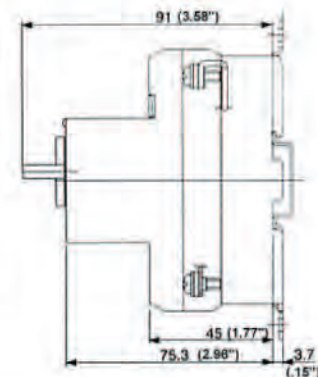
Dimensions (MBS32) Series



(MBS32 SG)



(MBS32 HG)



Dimensions (Approx.)
MM (inches)

Rocker Lever Operation, "Standard Interruption", 1^{3/4"} 45mm Width
MBS32 SG 22kA Interruption Capacity (480V)

Key Features:

- Clear Indication of Operator Position
- Padlockable OFF Operator
- Variety of Auxiliaries to fit all models
- Easy DIN RAIL Mount
- Trip Test Function

MBS32

SELECTION & PRICING

FLA Adjustment Range ①	Three Phase HP				Single Phase HP		Instantaneous Short Circuit Release Amps	Catalog No.	Open List Price \$	Enclosed -S4 ② List \$
	200-208V	220-240V	440-480V	575-600V	115V	230V				
0.1-0.16	-	-	-	-	-	-	2.1	MBS32 SG 001	89	119
0.16-0.25	-	-	-	-	-	-	3.3	MBS32 SG 002	89	119
0.25-0.4	-	-	-	-	-	-	5.2	MBS32 SG 004	89	119
0.4-0.63	-	-	-	-	-	-	8.2	MBS32 SG 006	89	119
0.63-1.0	-	-	1/2	1/2	-	-	13	MBS32 SG 010	98	128
1-1.6	1/4	1/3	3/4	3/4	-	1/10	20.8	MBS32 SG 016	98	128
1.6-2.5	1/2	1/2	1	1 ^{1/2}	-	1/6	32.5	MBS32 SG 025	98	128
2.5-4	3/4	3/4	2	3	1/8	1/3	52	MBS32 SG 040	98	128
4-6.3	1	1 ^{1/2}	3	5	1/4	1/2	81.9	MBS32 SG 063	98	128
6.3-10	2	3	5	7 ^{1/2}	1/2	1 ^{1/2}	130	MBS32 SG 100	98	128
9-13	3	3	7 ^{1/2}	10	1/2	2	169	MBS32 SG 130	121	151
11-16	3	5	10	10	1	2	208	MBS32 SG 160	121	151
14-20	5	5	10	15	1 ^{1/2}	3	260	MBS32 SG 200	121	151
19-25	7 ^{1/2}	7 ^{1/2}	15	20	2	3	325	MBS32 SG 250	132	162
24-32	10	10	20	30	2	5	416	MBS32 SG 320	140	170



MBS32 SG
Standard Interruption
Rocker Operation



OPTION

Consider MBS25 option for pushbutton operation. MBS25 is designed with smaller size and **LOWER QUANTITY PRICING.**

(See page MBS-19 for lower cost MBS25)

Enclosures for above see page 111.

② To include type IP55 (S4) enclosure, add -S4 to above part number
IP55 is DUST TIGHT / WATER TIGHT.
 Typical Enclosed Catalog Number: MBS32 SG 025-S4

Rotary Operation, "High Interruption", 1^{3/4"} 45mm Width
MBS32 HG 50kA Interruption Capacity (480V)

FLA Adjustment Range ①	Three Phase HP ①				Single Phase HP		Instantaneous Short Circuit Release Amps	Catalog No.	Open List Price \$	Nema 1/3R Enclosed -3R ③ \$
	200-208V	220-240V	440-480V	575-600V	115V	230V				
0.1-0.16	-	-	-	-	-	-	2.1	MBS32 HG 001	92	205
0.16-0.25	-	-	-	-	-	-	3.3	MBS32 HG 002	92	205
0.25-0.4	-	-	-	-	-	-	5.2	MBS32 HG 004	92	205
0.4-0.63	-	-	-	-	-	-	8.2	MBS32 HG 006	92	205
0.63-1.0	-	-	1/2	1/2	-	-	13	MBS32 HG 010	101	214
1-1.6	1/4	1/3	3/4	3/4	-	1/10	20.8	MBS32 HG 016	101	214
1.6-2.5	1/2	1/2	1	1 ^{1/2}	-	1/6	32.5	MBS32 HG 025	101	214
2.5-4	3/4	3/4	2	3	1/8	1/3	52	MBS32 HG 040	101	214
4-6.3	1	1 ^{1/2}	3	5	1/4	1/2	81.9	MBS32 HG 063	101	214
6.3-10	2	3	5	7 ^{1/2}	1/2	1 ^{1/2}	130	MBS32 HG 100	101	214
9-13	3	3	7 ^{1/2}	10	1/2	2	169	MBS32 HG 130	124	237
11-16	3	5	10	10	1	2	208	MBS32 HG 160	124	237
14-20	5	5	10	15	1 ^{1/2}	3	260	MBS32 HG 200	124	237
19-25	7 ^{1/2}	7 ^{1/2}	15	20	2	3	325	MBS32 HG 250	135	248
24-32	10	10	20	30	2	5	416	MBS32 HG 320	143	256



MBS32 HG
High Interruption
Rotary Operation

① Selection of the controller depends on the actual motor full load current and service factor. For motors with service factor of 1.15 or greater, use motor full load current to select the approximate current range. For motors with a service factor less than 1.15, multiply the normal full load current by .9 for the current setting.

② Single phase applications require all three overload legs to be energized for proper operation. Use separate conductor to connect terminal T2 to L3. Connect power to L1 and L2 and apply load between T1 and T3.

③ Enclosed unit includes safety door interlock & external operator.

MBS63



MBS63 HG
High Interruption

Thermal and magnetic protection

Features

- Current Range 6.3 - 63 Amp
- High Interruption 50kA @ 480V
- Thermal and Magnetic Protection
- High Breaking Capacity
- Visible Trip Condition (ON-OFF-Tripped)
- Common Accessories for both MBS32 / MBS63
- Rotary Handle Operators
- Ambient Temperature Compensation (-20°C — -60°C)
(-4°F — +140°F)
- Single phase sensitivity

Standards / Approvals



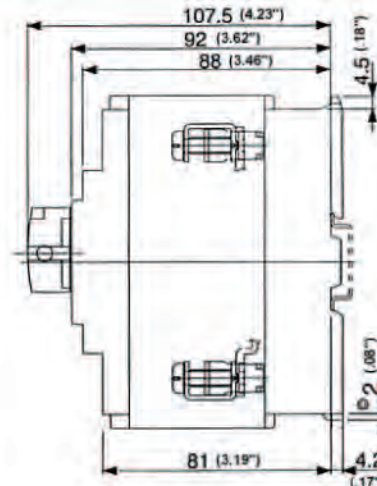
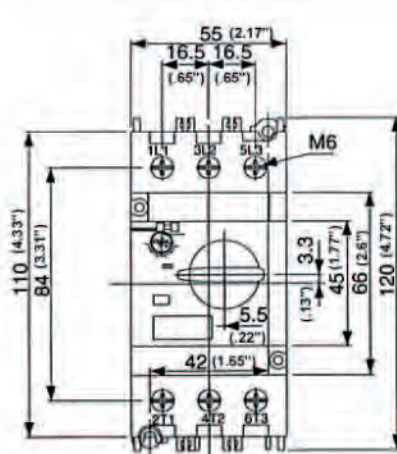
Certified Test Lab Approvals
UL508 and 508E
IEC 60947-1, 60947-2, 60947-4-1
DIN VDE 0600T 100/101/102
Shipboard approvals (on request)

Type 2 coordination per IEC
947-4-1 when used with Type LS or
LSK Series Contactors

Technical performances

- | Technical performances | Range |
|---|--|
| • Rated current adjustable | 6.3 - 63A |
| • Rated operational current | 6.3 - 63A |
| • Utilization category | IEC 60947-2 (Circuit Breaker)
IEC 60947-4-1 (MMS) |
| • Tripping Class 10 | |
| • Magnetic release - -13x max amp setting | |
| • Mechanical/electrical endurance | 50,000/25,000 |

Dimensions (MBS63) Series



MBS63 HG
Dimensions (Approx.)
MM (inches)

MBS63 Series

MBS63 HG

50KA INTERRUPTION CAPACITY (480V)

Key Features:

- Clear Indication of Operator Position
- Padlockable OFF Operator
- Variety of Auxiliaries to fit all models
- Trip Test Function
- Mechanical Safety Door Interlock

MBS63 CONTROLLER
"HIGH INTERRUPTION"



FLA Adjustment Range ①	Three Phase HP ①				Single Phase HP		Short Circuit Breaking Capacity ICU KA	Instantaneous Short Circuit Trip Amps	Catalog No.	Open List Price \$	Enclosed Nema 3R -3R	Enclosed Nema 4/12 -N4 ②
	200-208V	220-240V	440-480V	575-600V	115V	230V						
6.3-10	2	3	5	7-1/2	1/2	1 ^{1/2}	100	130	MBS63 HG 100	235	\$410	\$430
9-13	3	3	7-1/2	10	1/2	2	50	169	MBS63 HG 130	260	435	455
11-16	3	5	7-1/2	10	1	2	50	208	MBS63 HG 160	260	435	455
14-20	5	5	10	15	1 ^{1/2}	2	50	260	MBS63 HG 200	260	435	455
19-25	7-1/2	7-1/2	15	20	2	3	50	325	MBS63 HG 250	260	435	455
24-32	10	10	20	25	2	5	50	416	MBS63 HG 320	295	470	490
28-40	10	10	25	30	3	7 ^{1/2}	50	520	MBS63 HG 400	295	470	490
35-50	15	15	30	40	3	10	50	650	MBS63 HG 500	295	470	490
45-63	20	20	40	50	5	10	50	819	MBS63 HG 630	295	470	490

① Selection of the controller depends on the actual motor full load current and service factor. For motors with service factor of 1.15 or greater, use motor full load current to select the approximate current range. For motors with a service factor less than 1.15, multiply the normal full load current by .9 for the current setting.

② If NEMA 4X fiberglass is desired, replace -N4 with -4X. Same price. *Enclosed units include safety door int.operator

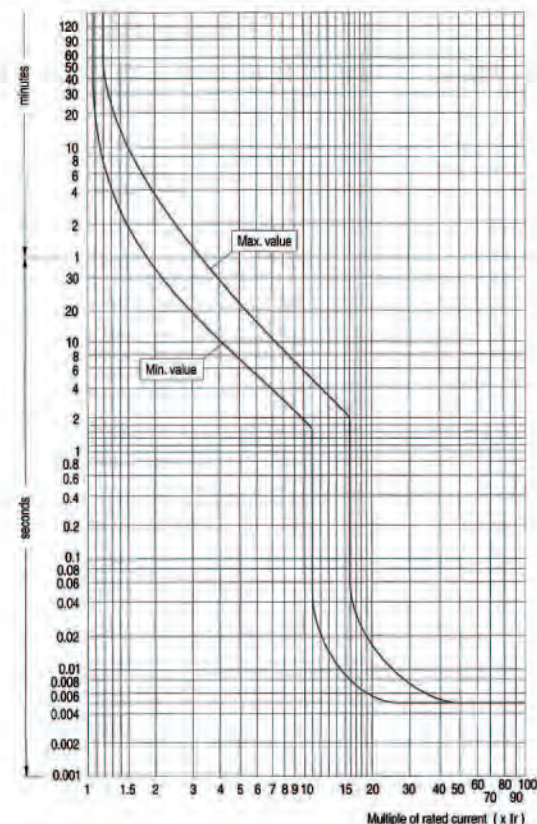


External Operator Kit - Kit Includes:

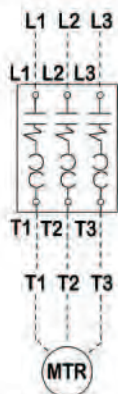
- Safety Door Interlock
- Padlockable Handle
- Shaft Coupling & Extension (See page 97.)

THERMAL-MAGNETIC TRIPPING CURVE

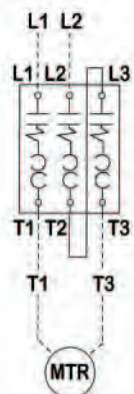
MBS63...



MBS32 and MBS63 THREE PHASE AND SINGLE PHASE CONNECTIONS



THREE PHASE



SINGLE PHASE

Note on Single Phase Connections

Single Phase applications require "all three" overload legs to be energized for proper operation. Use separate jumper to connect terminals T2 to L3. Connect power to L1 and L2 and apply load between T1 and T3.



Standards / Approvals

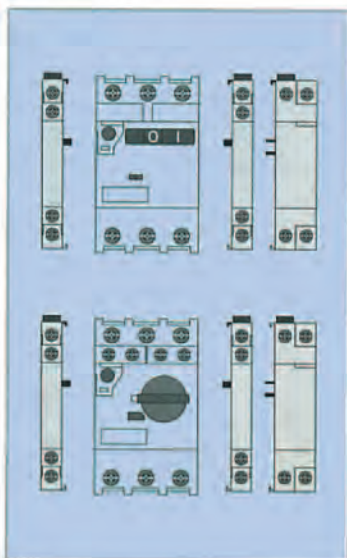


IEC 60947-1, 60947-2, 60947-4-1
DIN VDE 0600T 100/101/102
UL508E
Shipboard approvals (on request)
PTB test (on request)

Product range of Accessories

- Auxiliary contacts (frontal & lateral)
- Alarm contact block
- Auxiliary and alarm contact block
- Short-circuit alarm contact block
- Undervoltage release
- Undervoltage release with 2NO early make contacts
- Shunt Trip Device

Auxiliaries



Technical performances

- All auxiliaries can be mounted and changed easily, without any tools
- Both frames MBS32 and MBS63 use same auxiliaries
- All terminals are capable for 2 cables (0.5mm² - 2.5mm²)
- Side auxiliary contacts are rated to A600, P300 duty
- Frontal auxiliary contacts are rated to B300, Q300 duty
- Minimum operational contact 5mA, 17Vdc
- All terminal screwhead are Pozidriv 2 and slotted combination

Accessories

- Auxiliaries (page 109 and 110.)
- Combination Components (page 115, 114)
- Technical data (page 103)

Auxiliary Explanation

Auxiliary Type	AUX. PART # PREFIX	"SWITCHED" BY ACTUATION	"THERMAL" OVERLOAD TRIP	"SHORT" CIRCUIT TRIP
Auxiliary	MAHS	YES	YES	YES
Alarm Contact	MAHSB	NO	YES	YES
Combination Auxiliary*	MAHSD	YES	YES	YES
Alarm	MAHSD	NO	YES	YES
Short Circuit	MAHSS	NO	NO	YES

Code:

"YES"= Contact changes state (if N.O. it closes)

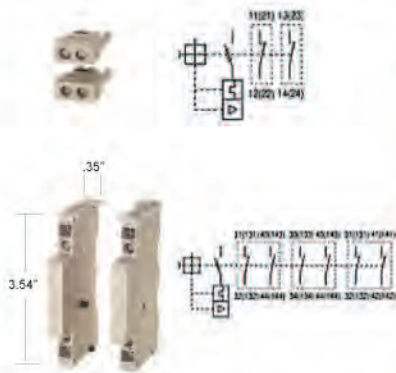
"NO"= Contacts remain unchanged (if N.O. it remains open)

* (Auxiliary / Alarm) is "one" block assembly with two "separate contacts"

Side Contact Blocks: 4 Amps at 110Vac or 230Vac

Front Contact Blocks: 3 Amps 110Vac
1.5 Amps 230Vac

Auxiliary contact blocks



Description	For use with	Type	Cat. no.	List
Front Mount				
Maximum 2 auxiliary contact blocks per manual motor starter	MBS32... and MBS63...	1NO	MAHS10FB	\$11
	MBS32... and MBS63...	1NC	MAHS01FB	11
Side Mount				
Two contacts	MBS32... and MBS63...	1NO+1NC	MAHS11LL	\$15
Side mounting on the left	MBS32... and MBS63...	2NO	MAHS20LL	15
	MBS32... and MBS63...	2NC	MAHS02LL	15
Two contacts	MBS32... and MBS63...	1NO+1NC	MAHS11LR	15
Side mounting on the right	MBS32... and MBS63...	2NO	MAHS20LR	15
	MBS32... and MBS63...	2NC	MAHS02LR	15

Alarm contact block



Description	For use with	Type	Cat. no.	List
Front Mount				
Front mount on the right	MBS32... and MBS63...	1NO	MAHSB10FR	\$13
Single contact	MBS32... and MBS63...	1NC	MAHSB01FR	13

Auxiliary / Alarm contact block



Description	For use with	Type	Cat. no.	List
Side Mount				
Side mounting on the left (front alarm contact block can not be used at the same time)	MBS32... and MBS63...	1NO(Alarm)+1NO(Aux)	MAHSD1010LL	\$22
	MBS32... and MBS63...	1NO(Alarm)+1NC(Aux)	MAHSD1001LL	22
Two contacts	MBS32... and MBS63...	1NC(Alarm)+1NO(Aux)	MAHSD0110LL	22
	MBS32... and MBS63...	1NC(Alarm)+1NC(Aux)	MAHSD0101LL	22

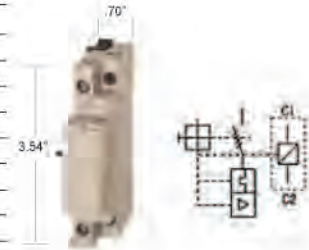
Short-circuit alarm contact block required for UL508 Type E



Description	For use with	Type	Cat. no.	List
Side Mount				
Side mounting on the left	MBS32... and MBS63...	1NO(Alarm)+1NC(Alarm)	MAHSS11LL	\$15
Two contacts NO + NC				
Mechanical indication marking				

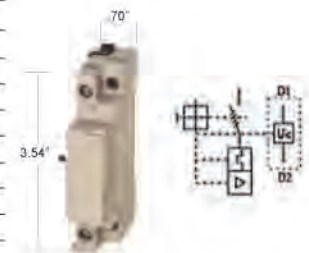
Shunt trip device

Description	For use with	Type	Cat. no.	List
Side mounting on the right (Can not be used together with the undervoltage trip device)	MBS32... and MBS63...	24V 50/60Hz	MAALRA1	\$48
Shunt Trip No Auxiliaries	MBS32... and MBS63...	48V 60Hz	MAALRAF	48
	MBS32... and MBS63...	48V 50Hz / 60V 60Hz	MAALRAG	48
	MBS32... and MBS63...	110/127V 50Hz / 120V 60Hz	MAALRAJ	48
	MBS32... and MBS63...	208V 60Hz	MAALRAM	48
	MBS32... and MBS63...	220/230V 50Hz / 240/260V 60Hz	MAALRAN	48
	MBS32... and MBS63...	240V 50Hz / 277V 60Hz	MAALRAR	48
	MBS32... and MBS63...	380/400V 50Hz	MAALRAU	48
	MBS32... and MBS63...	415/440V 50Hz / 460/480V 60Hz	MAALRAW	48
	MBS32... and MBS63...	500 V 50Hz / 600V 60Hz	MAALRAY	48
	MBS32... and MBS63...	24 to 60Vdc	MAALRDD	48
MBS32... and MBS63...	110 to 240Vdc	MAALRDJ	48	

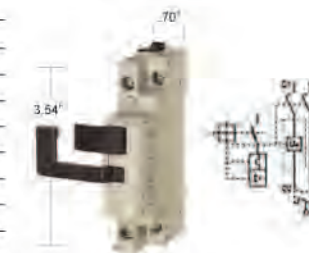


Undervoltage trip device

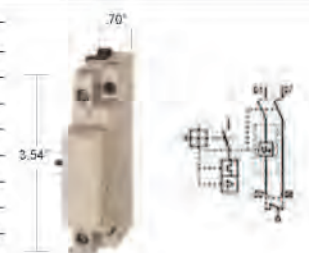
Description	For use with	Type	Cat. no.	List
Side mounting on the right (Can not be used together with the shunt trip device)	MBS32... and MBS63...	24V 50Hz	MARLRAD	\$62
Undervoltage Trip No Auxiliaries	MBS32... and MBS63...	24V 60Hz	MARLRAC	62
	MBS32... and MBS63...	48V 50Hz	MARLRAG	62
	MBS32... and MBS63...	48V 60Hz	MARLRAF	62
	MBS32... and MBS63...	110/127V 50Hz / 120V 60Hz	MARLRAJ	62
	MBS32... and MBS63...	208V 60Hz	MARLRAM	62
	MBS32... and MBS63...	220/230V 50Hz / 240/260V 60Hz	MARLRAN	62
	MBS32... and MBS63...	240V 50Hz / 277V 60Hz	MARLRAR	62
	MBS32... and MBS63...	380/400V 50Hz	MARLRAU	62
	MBS32... and MBS63...	415/440V 50Hz / 460/480V 60Hz	MARLRAW	62
	MBS32... and MBS63...	500V 50Hz / 600V 60Hz	MARLRDY	62



Side mounting on the right (Can not be used together with the shunt trip device)	MBS32S...	24V 50Hz	MAR20LTAD	\$62
UV Trip with 2 early make auxiliaries Type N.O. *(MBS32 S only)	MBS32S...	24V 60Hz	MAR20LTAC	62
	MBS32S...	48V 50Hz	MAR20LTAG	62
	MBS32S...	48V 60Hz	MAR20LTAF	62
	MBS32S...	110/127V 50Hz / 120V 60Hz	MAR20LTAJ	62
	MBS32S...	208V 60Hz	MAR20LTAM	62
	MBS32S...	220/230V 50Hz / 240/260V 60Hz	MAR20LTAN	62
	MBS32S...	240V 50Hz / 277V 60Hz	MAR20LTAR	62
	MBS32S...	380/400V 50Hz	MAR20LTAU	62
	MBS32S...	415/440V 50Hz / 460/480V 60Hz	MAR20LTAW	62
	MBS32S...	500V 50Hz / 600V 60Hz	MAR20LTAY	62



Side mounting on the right (Can not be used together with the shunt trip device)	MBS32H... and MBS63...	24V 50Hz	MAR20LCAD	\$62
UV Trip with 2 early make auxiliaries (MBS32H & MBS63H)	MBS32H... and MBS63...	24V 60Hz	MAR20LCAC	62
	MBS32H... and MBS63...	48V 50Hz	MAR20LCAG	62
	MBS32H... and MBS63...	48V 60Hz	MAR20LCAF	62
	MBS32H... and MBS63...	110/127V 50Hz / 120V 60Hz	MAR20LCAJ	62
	MBS32H... and MBS63...	208V 60Hz	MAR20LCAM	62
	MBS32H... and MBS63...	220/230V 50Hz / 240/260V 60Hz	MAR20LCAN	62
	MBS32H... and MBS63...	240V 50Hz / 277V 60Hz	MAR20LCAR	62
	MBS32H... and MBS63...	380/400V 50Hz	MAR20LCAU	62
	MBS32H... and MBS63...	415/440V 50Hz / 460/480V 60Hz	MAR20LCAW	62
	MBS32H... and MBS63...	500V 50Hz / 600V 60Hz	MAR20LCAY	62



Terminal protector

Description	For use with	Type	Cat. no.	List
Protection against accidental finger touch (IP20) for MBS63 manual motor starters	MBS63...		MAPTP63	\$6

Discount Schedule ST

Enclosures for MBS32 SG



IP55 Dust Tight / Water Tight	Description	Cat. no.	List
Plastic enclosures For MBS32 SG ONLY	Surface mounting IP55 - <i>Dust Tight/Water Tight</i>	MI55	\$30
	Flush mounting IP55 - <i>Dust Tight/Water Tight</i>	MIT55	22

(**) If adding undervoltage release to these enclosures, please add adaptor set "MIAS" to enclosure.

Mounting accessories for MBS32SG enclosures only



Description	Cat. no.	List
Neutral connection	MIN	\$5



Adaptor set	Description	Cat. no.	List
Required boot kit for adding undervoltage release to enclosures MI55 and MIT55.	For enclosures used with MBS32*SG and undervoltage release with 2NO auxiliary contacts	MIAS	\$5



Padlocking device	Description	Cat. no.	List
	For three padlocks with max. 8mm shackle diameter Not to be used with emergency stop handle	MID	\$15



Emergency mushroom push-button IP55	Description	Cat. no.	List
	Mushroom momentary operation	MIPM	\$20
	Mushroom maintained, unlatch by turning	MIPL	30
	Mushroom maintained, unlatch with a key	MIPK	85



Indicator lamps For Cover IP55	Color	Voltage	Cat. no.	List
	Green	110/120V	MILGJ	\$15
	Green	220/240V	MILGN	15
	Green	380/440V	MILGU	15
	Green	480/500V	MILGX	15
	Green	600V	MILGY	15
	Red	110/120V	MILRJ	15
	Red	220/240V	MILRN	15
	Red	380/440V	MILRU	15
	Red	480/500V	MILRX	15
	Red	600V	MILRY	15
	Transparent	110/120V	MILCJ	15
	Transparent	220/240V	MILCN	15
	Transparent	380/440V	MILCU	15
	Transparent	480/500V	MILCX	15
	Transparent	600V	MILCY	15

External handle operators

Description (NEMA 1, 3R, 12)	For use with	Type	Cat. no	List
Used for thru door safety door interlock applications	MBS32*H...(IP55)	Standard (black)	MA32HB	\$49
	MBS32*H...(IP55)	Emergency (red/yellow)	MA32HR	49
Lockable with 1, 2 or 3 padlocks diameter 4 to 8mm	MBS63...(IP55)	Standard (black)	MA63HB	49
	MBS63...(IP55)	Emergency (red/yellow)	MA63HR	49

Two types: standard and emergency applications
ON/OFF/TRIPPING position marking
Protection degree: IP55 WaterTight/DustTight (Type 1,3R,12)
Shaft mounting depths:
139.8-289.8mm (5.5"-11.4") for MA32HB, MA32HR / 161-311.11mm (6.3"-12.3") for MAH63HB, MA63HR

Package parts and quantities:	
1 operator handle	1 shaft
1 shaft guide clamp	1 interlock coupling
4 mounting screws	

For (4X) Applications Use (IP66) "BY" Operator	For use with	Type	Cat. No.	List
* Will not indicate tripped position	*MBS32H	Black	MA32-BY-SS	\$68
	*MBS32H	Emergency (Red/Yellow)	MA32-BY-RG	68
	*MBS63H	Black	MA63-BY-SS	68
	*MBS63H	Emergency (Red/Yellow)	MA63-BY-RG	68



External Handle

Combination Starter Components

Description	For use with	AC/DC	MBS32	MBS63	Cat. no	List
Plastic plates for mounting the fuseless starter in panels or in 35mm DIN rail	LS4...LS5K...LS7K...LS11K	AC/DC	MBS32		MF32B1	\$20
	LS12K..., LS15K..	AC	MBS32		MF32B4	20
	LS12K...,LS15K...,LS18K..	AC/DC	MBS63		MF63B2	30
	LS22K...,LS30K...	AC/DC	MBS63		MF63B3	30
LS12K...,LS15K...	AC	MBS32/63		MF32C11B	6	

* For mounting two base plates together for reversing applications
* Link connector must be ordered with Combination Plate for reversing applications.
Base plates used for assembly of Combination Starters.



Combination Mounting Plates

Description	For use with contactor	Cat. no	List
Fit the plastic cover into the front of the correspondent contactor to allow a clear identification of the terminal numbering	LS4K...,LS5K...,LS7K.. without built-in auxiliary contact	MF00S7	\$3
	LS4K...,LS5K...,LS7K.. with built-in 1NO auxiliary contact	MF10S7	3
Contactor cover for combination starter applications	LS4K...,LS5K...,LS7K.. with built-in 1NC auxiliary contact	MF01S7	3
	LS11K... without built-in auxiliary contact	MF00S11	3
	LS12K...,LS15K.. without built-in auxiliary contact	MF00S16	4
	LS12K...,LS15K.. with built-in 1NO auxiliary contact	MF10S16	4
	LS12K...,LS15K.. with built-in 1NC auxiliary contact	MF01S16	4
	LS18K... without auxiliaries	MF00S18	4
	LS22K...,LS30K.. without auxiliaries	MF00S37	5



Contactor Terminal Marker

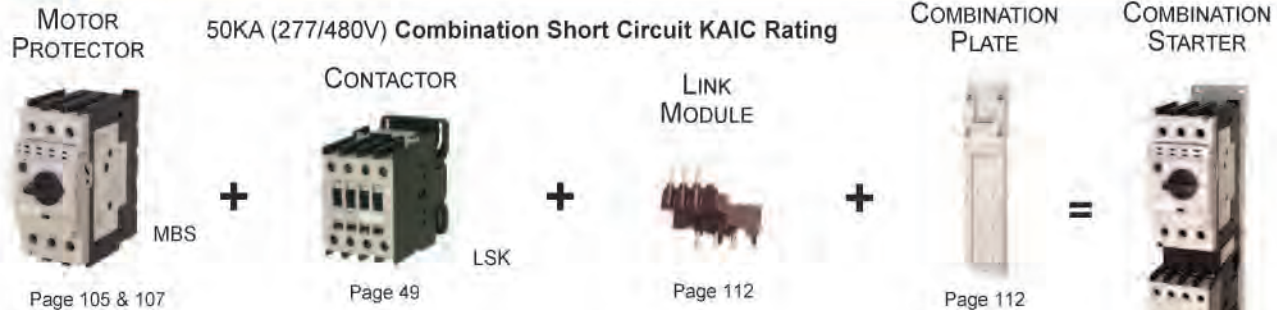
Description	For use with	AC/DC	Frame Size	Cat. no	List
For mechanical and electrical connection between contactors and manual motor starters	LS05..	AC/DC	MBS32	MF32L05B	\$6
	LS4K...,LS5K...,LS7K..	AC	MBS32	MF32L7A	9
Link Modules	LS4K...,LS5K...,LS7K..	DC	MBS32	MF32L7D	9
	LS11K...	AC	MBS32	MF32L11A	9
	LS11K...	DC	MBS32	MF32L11D	9
	LS12K...,LS15K...	AC	MBS32	MF32L16A	9
	LS12K...,LS15K...	DC	MBS32	MF32L16S	9
	LS12K...,LS15K...	AC	MBS63	MF63L16A	20
	LS18K...	AC	MBS63	MF63L18A	20
	LS12K...,LS15K	DC	MBS63	MF63L16D	20
	LS18K...	DC	MBS63	MF63L18D	20
	LS22K...,LS30K..	AC	MBS63	MF63L30A	20



Link to Contactor



MBS SERIES COMBINATIONS OPEN TYPE



Open MBS Combinations

MEETS THE NEW UL508 "TYPE E" REQUIREMENTS"

	Amp Range	Single Phase HP		Three Phase HP				Contactor	Group Installation Max CB or Fuse Size	Part # Combination Starter	-O Open List
		115V	230V	200V	230V	460V	575V				
30 Amp Frame - MBS32HG											
MBS32HG	0.63-1.0	-	-	-	-	1/2	1/2	LS05	500A	MBS32CH-010-*	\$172
	1-1.6	-	1/10	1/4	1/3	3/4	3/4			MBS32CH-016-*	
	1.6-2.5	-	1/6	1/2	1/2	1	1 1/2			MBS32CH-025-*	
	2.5-4	1/8	1/3	3/4	3/4	2	3			MBS32CH-040-*	
	4.0-6.3	1/4	1/2	1	1 1/2	3	5	MBS32CH-063-*			
	6.3-10	1/2	1 1/2	2	3	5	7 1/2	LS4K	MBS32CH-100-*	\$248	
	9-13	1/2	2	3	3	7 1/2	10	LS5K	MBS32CH-130-*	\$296	
	11-16	1	2	3	5	10	10	LS7K	MBS32CH-160-*	\$319	
	14-20	1 1/2	3	5	5	10	15	LS11K	MBS32CH-200-*	\$334	
	19-25	1 1/2	3	7 1/2	7 1/2	15	20	LS15K-4	MBS32CH-250-*	\$366	
24-32	2	5	10	10	20	25	LS15K-4	MBS32CH-320-*	\$374		
60 Amp Frame - MBS63HG											
MBS63HG	11-16	1	2	3	5	10	10	LS15K-4	1500A	MBS63CH-160-*	\$512
	14-20	1 1/2	3	5	5	10	15			MBS63CH-200-*	\$512
	19-25	2	3	7 1/2	7 1/2	15	20			MBS63CH-250-*	\$512
	24-32	2	5	10	10	20	25			MBS63CH-320-*	\$547
	28-40	3	5	10	10	25	25	LS18K	MBS63CH-400-*	\$578	
	35-50	3	7 1/2	15	15	30	40	LS22K	MBS63CH-500-*	\$591	
	45-63	5	10	15	20	40	50	LS30K	MBS63CH-630-*	\$615	

Notes: ▲ - "All" MBS32 combinations are "standard" with type "H" High Interruption Rotary Operator. To replace with "standard" interruption type (rocker lever design) replace "H" with "S" deduct \$3.00 List

To Comply with "UL508 Type E" Change "C" to "E" in part number.

Add \$27 list to MBS32 Combinations

Add \$15 list to MBS63 Combinations Example : MBS32EH-100-A \$275 list.

▲ ▲ - Combinations using "LS05" contactor are standard with no combination plate. If optional LS4K contactor is desired in place of LS05 on combinations (MBS32CH-010-MBS32CH-063). "Add" suffix - 4K to the end of the part number. (Add \$28 List) Plate is included with this.



For LS4K-LS18K (3 pole)			For LS22K-LS55K (3 pole)		
AC	60Hz	50Hz	AC	60Hz	50Hz
-G	24	24	-G	24	24
-A	120	120	-A	120	120
-B	200	200	-B	200	200
-C	220	220	-C	220	220
-H	277	230	-H	277	230
-E	480	380	-E	480	380
-F	600	500	-F	600	500
DC add \$3.0 to list			DC add \$4.5 to list		
-MSW	12 VDC		-NSW	24-28 VDC	
-NSW	24VDC		-OSW	42-48 VDC	
-OSW	48 VDC		-PSW	110-127 VDC	
-PSW	110 VDC		-RSW	220-250 VDC	
-RSW	220 VDC				

NOTE: Above combinations include auxiliaries on the contactors as "standard".

Contactor	Standard Number Auxiliaries
LS05-LS15K	1 N.O.
LS18K-LS30K	1 N.O. 1 N.C.

*For additional auxiliaries and accessories see pages 109 to 115

For factory modifications see page 116

For dimensions please see page 117

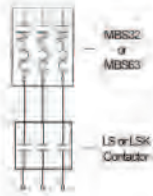


MBS SERIES COMBINATIONS ENCLOSED TYPE



Enclosed MBS Combinations 600V AC

4X ENCLOSED CONTROL



Includes:

- ✓ Motor Protector (Controller, Short Circuit & Overload Protection)
- ✓ Enclosure
- ✓ Through Door Safety Interlock (Padlockable)
- ✓ Contactor



50KA (277/480V) Combination Short Circuit KA Rating

	Amp Range	Single Phase HP		Three Phase HP				Contactor	Group Installation Max CB or Fuse Size	Part # Combination Starter	-M1 Nema List	-3R Nema3R List	-12 Nema12 List	-4X Nema4X List
		115V	230V	200V	230V	460V	575V							
MBS32HG	0.63-1.0	-	-	-	-	1/2	1/2	LS05	500A	MBS32CH-010-*	\$430	\$430	\$515	\$640
	1-1.6	-	1/10	1/4	1/3	3/4	3/4							
	1.6-2.5	-	1/6	1/2	1/2	1	1 ^{1/2}							
	2.5-4	1/8	1/3	3/4	3/4	2	3							
	4.0-6.3	1/4	1/2	1	1 ^{1/2}	3	5							
	6.3-10	1/2	1 ^{1/2}	2	3	5	7 ^{1/2}	LS4K	500A	MBS32CH-100-*	\$469	\$469	\$554	\$679
	9-13	1/2	2	3	3	7 ^{1/2}	10	LS5K		MBS32CH-130-*	\$514	\$514	\$599	\$724
	11-16	1	2	3	5	10	10	LS7K		MBS32CH-160-*	\$539	\$539	\$624	\$749
	14-20	1 ^{1/2}	3	5	5	10	15	LS11K		MBS32CH-200-*	\$554	\$554	\$639	\$764
	19-25	1 ^{1/2}	3	7 ^{1/2}	7 ^{1/2}	15	20	LS15K		MBS32CH-250-*	\$586	\$586	\$671	\$796
24-32	2	5	10	10	20	25	LS15K	MBS32CH-320-*	\$594	\$594	\$679	\$804		
60 Amp Frame - MBS63HG														
MBS63HG	11-16	1	2	3	5	10	10	LS15K	500A	MBS63CH-160-*	\$687	\$687	\$772	\$897
	14-20	1 ^{1/2}	3	5	5	10	15			MBS63CH-200-*	\$687	\$687	\$772	\$897
	19-25	2	3	7 ^{1/2}	7 ^{1/2}	15	20			MBS63CH-250-*	\$687	\$687	\$772	\$897
	24-32	2	5	10	10	20	25			MBS63CH-320-*	\$722	\$722	\$807	\$932
	28-40	3	5	10	10	25	25	LS18K		MBS63CH-400-*	\$753	\$753	\$838	\$963
	35-50	3	7 ^{1/2}	15	15	30	40	LS22K		MBS63CH-500-*	\$766	\$766	\$851	\$976
	45-63	5	10	15	20	40	50	LS30K		MBS63CH-630-*	\$798	\$798	\$890	\$1018

For ordering details and notes, see previous page. * - Indicates Coil Suffix shown on previous page. Modifications page 116

HOW DO I ORDER COMPONENTS ONLY?

Example: MBS32CH-010-A
Parts - MBS32HG-010 / LS05.10-A / MF32L05B
No plate necessary.

Open MBS Combinations

Open Combination Part #	Motor Protector P/N	List Each	Contactor LSK Series P/N	List Each	Link Module	List Each	Combination Plate	List Each	Identification Cover	List
MBS32CH-010-*	MBS32HG-010	\$101	LS05.10-*	\$40	MF32L05B	\$6	None	\$0	Non Required	0
MBS32CH-016-*	MBS32HG-016	\$101	LS05.10-*	\$40						
MBS32CH-025-*	MBS32HG-025	\$101	LS05.10-*	\$40						
MBS32CH-040-*	MBS32HG-040	\$101	LS05.10-*	\$40						
MBS32CH-063-*	MBS32HG-063	\$101	LS05.10-*	\$40						
MBS32CH-100-*	MBS32HG-100	\$101	LS4K.10-*	\$90	MF32L7A	\$9	MF32B1	\$20	MF1057	\$3
MBS32CH-130-*	MBS32HG-130	\$124	LS5K.10-*	\$115						
MBS32CH-160-*	MBS32HG-160	\$124	LS7K.10-*	\$138						
MBS32CH-200-*	MBS32HG-200	\$124	LSK11K.10-*	\$153	MF32L11A	\$9		\$20	MF00516	
MBS32CH-250-*	MBS32HG-250	\$135	LS15K-4-*	\$195	MF32L16A	\$9	MF32B4	\$20	MF10516	\$4
MBS32CH-320-*	MBS32HG-320	\$143	LS15K-4-*	\$195						
60 Amp Frame MBS63HG										
MBS63CH-160-*	MBS63HG-160	\$260	LS15K-4-*	\$195	MF63L16A	\$20	MF63B2	\$30	MF10S16	\$4
MBS63CH-200-*	MBS63HG-200	\$260	LS15K-4-*	\$195						
MBS63CH-250-*	MBS63HG-250	\$260	LS15K-4-*	\$195						
MBS63CH-320-*	MBS63HG-320	\$295	LS15K-4-*	\$195						
MBS63CH-400-*	MBS63HG-400	\$295	LS18K.11-*	\$204	MF63L18A	\$20	MF63B3	\$30	MF00S37	\$5
MBS63CH-500-*	MBS63HG-500	\$295	LS22K.11-*	\$216	MF63L30A	\$20	MF63B3	\$30		
MBS63CH-630-*	MBS63HG-630	\$295	LS30K.11-*	\$240	MF63L30A	\$20				

Description	-Suffix Adder	-List Adder	Notes
HAND - OFF - AUTO (Nema 1)	-KSL-1	\$35.00	
OFF - ON - SELECTOR (Nema1)	-KSN-1	\$35.00	
HAND - OFF - AUTO SELECTOR (Nema 12,4X,3R)	-KSL-3	\$90.00	
OFF - ON - SELECTOR (Nema 12,4X,3R)	-KSN-3	\$90.00	
START / STOP OPERATOR (Nema 3R,12,4X)	-KSS-3	\$90.00	
START / STOP OPERATOR (Nema1)	-KSS-2	\$35.00	
HAND-OFF-AUTO + START BUTTONS (Nema 1)	-KSL-4	\$70.00	For Pump Panels
HAND-OFF-AUTO + START BUTTONS (Nema 3R,12,4X)	-KSL-5	\$100.00	For Pump Panels
FWD / REV / STOP PUSH-BUTTONS	-FRS	\$160.00	
GREEN PILOT LIGHT (Nema1,4X,3R,12) ②	-PLG	\$60.00	
RED PILOT LIGHT (Nema1,4X,3R,12) ②	-PLR	\$60.00	
208/230/460-120 Transformer (50VA) ③	-FT___①	\$135.00	No Primary fusing
<i>For sizes LS05-LS18K combinations</i>	-PFT___①	\$223.00	③ Primary fusing included
208/230/460-120 Transformer (100VA) ③	-FT___①	\$280.00	No Primary fusing
<i>For sizes LS22K-LS30K combinations</i>	-PFT___①	\$368.00	③ Primary fusing included

① Transformer will be wired per the primary voltages specified: for example “-FT 480” (480V Primary)

② Voltage of pilot light will be that of the control voltage specified in control part number.

③ Primary fusing required for UL listed control panel with transformer.



THE “MBS32 CS” - COMBINATION

(Rocker lever design)

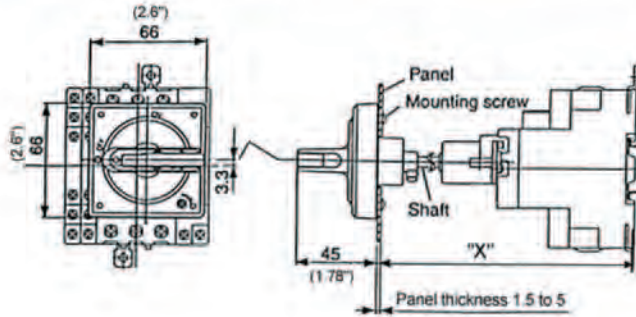
With a “standard” interruption capacity of 22kA @ 480V



THE “MBS32 CH” - COMBINATION

(Rotary lever design)

With a “high” interruption capacity of 50kA @ 480V

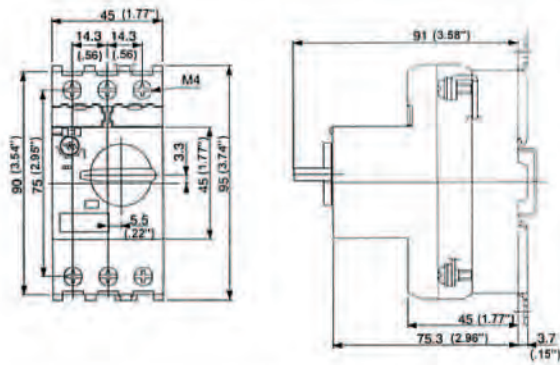


STANDARD SHAFT		
X - Dimensions		
Type	Min.	Max.
MBS32CH	133.75 (5 ^{1/4})	292 (11 ^{1/2})
MBS63CH	152 (6)	308 (12 ^{1/8})

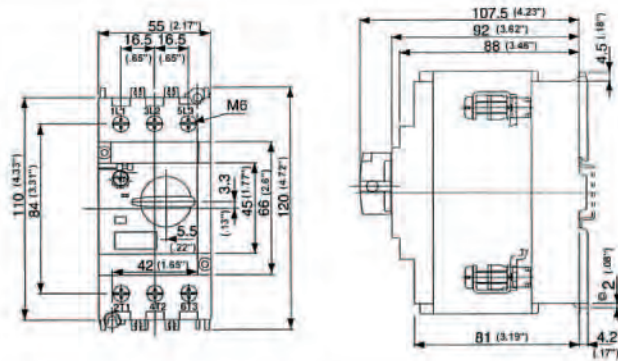
X = Dimension from bottom of switch to inside enclosure cover.

Note: See below for combination minimum necessary depth.

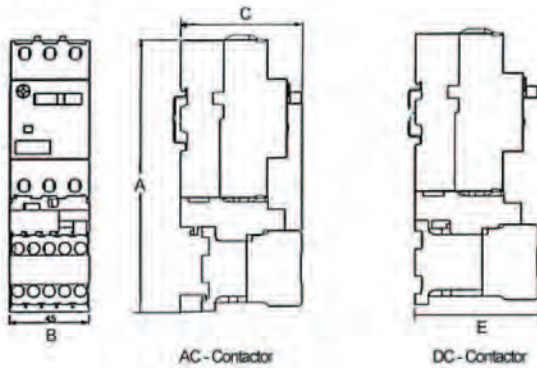
MBS32 Rotary



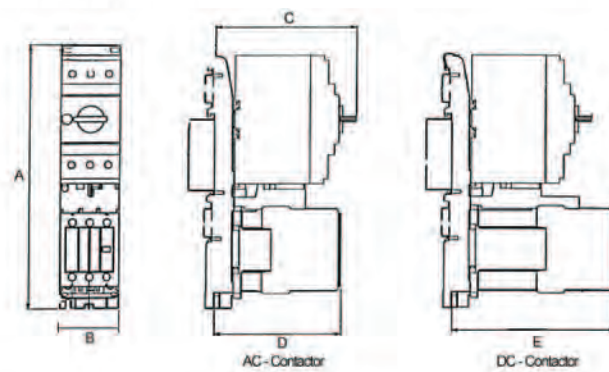
MBS63



"MBS32CS"



"MBS32CH & 'MBS63CH"



"OPEN" Combination Dimensions

Dimensions (Approx. Inches)	A	B	C	D	E
MBS32C"H"-010-063	6 ^{1/8}	1 ^{3/4}	4 ^{1/2}	2 ^{5/8}	2 ^{5/8}
MBS32C"S"-010-063	6 ^{1/8}	1 ^{3/4}	3 ^{5/8}	2 ^{5/8}	2 ^{5/8}
MBS32C"H"-100-160	8 ^{1/8}	1 ^{3/4}	4 ^{1/2}	4 ^{1/4}	5 ^{1/4}
MBS32C"S"-100-160	8 ^{1/8}	1 ^{3/4}	3 ^{5/8}	4 ^{1/4}	5 ^{1/4}
MBS32C"H"-250-320	9 ^{3/4}	2 ^{1/4}	5 ^{1/2}	4 ^{7/8}	5 ^{3/4}
MBS63C"H"-160-320	9 ^{3/4}	2 ^{1/4}	5 ^{1/2}	4 ^{7/8}	5 ^{3/4}
MBS63C"H"-500	9 ^{7/8}	2 ^{9/16}	5 ^{1/2}	5 ^{1/2}	6 ^{1/2}
MBS63C"H"-630	10 ^{1/8}	2 ^{9/16}	5 ^{1/2}	5 ^{5/8}	6 ^{5/8}



Starter carrier type pl 54 for snap-on to DIN rail	with 2 integral DIN rails for mounting of motor starter and contactor	MBS 25-206	\$15.00
3 phase busbar block type d fully isolated, $U_i = 660V$, $I_U = 80A$	with 2 connections, length 99 mm with 3 connections, length 155 mm with 4 connections, length 208 mm with 5 connections, length 262 mm	MBS 25-210 MBS 25-240 MBS 25-207 MBS 25-208	\$16.00 \$16.00 \$22.00 \$25.00
Protection cover 3 pole	for unused busbar terminations	MBS 25-211	\$ 2.00
Supply block type db fully isolated, $U_i = 660V$, $I_U = 80A$	3 pole for 3 phase busbar block type d	MBS 25-209	\$16.00

COMBINATION MANUAL MOTOR CONTROLS

(Din Rail or Screw Mount)

Three Phase 3 Pole 600 Volt

Three Phase Horse Power			Thermal Overload Relay Adjustment Range (AMP)*		Basic Catalog No.	OPEN LIST
200V	230V	460V	575V			
				0.25-0.4	MBS 25-D-L5K-*	\$182
				0.4-.63	MBS 25-E-L5K-*	182
	1/4	1/2	1/2	.63-1.0	MBS 25-F-L5K-*	191
1/4	1/3	3/4	1	1.0-1.6	MBS 25-G-L5K-*	191
1/2	1/2	1	1-1/2	1.6-2.5	MBS 25-H-L5K-*	191
3/4	1	2	3	2.5-4	MBS 25-I-L5K-*	191
1-1/2	1-1/2	3	5	4-6	MBS 25-K-L5K-*	191
2	3	5	7-1/2	6-10	MBS 25-L-L5K-*	191
3	5	10	10	10-16	MBS 25-M-L5K-*	202
5	7-1/2	15	15	16-20	MBS 25-N-L7K-*	205
-	7-1/2	15	20	20-25	MBS 25-O-L11K-*	230

* Specify voltage suffix

- A 120V 60Hz 110V 50Hz
- C 240V 60Hz 220V 50Hz
- D 380V 50Hz
- E 480V 60Hz
- G 24V 60Hz

Combination Rail Mounting Brackets
Includes 2 DIN Rails to mount MBS25 and LS contactors MBS 25-206.



- Combination Manual Motor Controls are an ideal way of having short circuit protection provided with Magnetic Instantaneous trip as well as inverse time thermal protection built into one compact package.

- To increase short circuit protection to 50KA add option ID50 - current limiter (380 Vac) max.

- The combination allows you to utilize all MBS 25 options including Remote Shunt Trip, Undervoltage Trip and additional auxiliaries if required. (Found on page 96.)



Starter carrier type pl 54 for snap-on to DIN rail	with 2 integral DIN rails for mounting of motor starter and contactor	MBS 25-206	\$15.00
3 phase busbar block type d fully isolated, $U_i = 660V$, $I_U = 80A$	with 2 connections, length 99 mm with 3 connections, length 155 mm with 4 connections, length 208 mm with 5 connections, length 262 mm	MBS 25-210 MBS 25-240 MBS 25-207 MBS 25-208	\$16.00 \$16.00 \$22.00 \$25.00
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1-1/2	1-1/2	3	5	4-6	MBS 25-K-L5K-*	191
2	3	5	7-1/2	6-10	MBS 25-L-L5K-*	191
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