

Fig. 1. Outside View

**Motor Operator  
Operating Instructions**

Type:  
YA7MA

- |                            |                             |
|----------------------------|-----------------------------|
| ① Manual operating handle  | ② Indicator *1              |
| ③ Lock plate               | ④ Control circuit terminals |
| ⑤ Motor operator nameplate | ⑥ Control circuit nameplate |
| ⑦ Mounting screws          |                             |

\*1 Red: Breaker ON. Green: Breaker OFF. White: Breaker TRIPPED.

**Dorman Smith Switchgear Limited**  
8 Swinbourne Drive  
Springwood Industrial Estate  
Braintree Essex  
CM7 2YG UK  
Tel: +44 (0) 844 225 1063  
Fax: +44 (0) 844 225 1064

AS10214

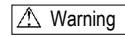
The Motor Operator motorises the breaker open/close (reset) operation. The operator also allows you to operate the breaker manually.

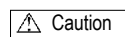
Please read these instructions carefully to ensure correct use of the Operator. This manual is to be delivered to the user after completion of the installation work.

## Safety Notices

Be sure to read these instructions and other associated documents accompanying the product thoroughly to familiarise yourself with the product handling, safety information and all other precautions before mounting, using, servicing or inspecting the product.

In these instructions, safety notices are divided into "Warning" and "Caution" according to the hazard level.

 **Warning** A warning notice with this symbol indicates that neglecting the suggested procedure or practice could be fatal or result in serious personal injury.

 **Caution** A caution notice with this symbol indicates that neglecting the suggested procedure or practice could result in moderate or slight personal injury and/or property damage.

Note that failing to observe caution notices could result in serious injury/damage in some situations. As safety notices contain important information, be sure to read and observe them.

## Motorised Operation

### 1-1. Closing Operation

Closing an external ON switch will close the breaker within 0.06 seconds. Drawing out the lock plate disables the breaker to close. To enable the breaker closing operation, push in the lock plate securely. The breaker with undervoltage trip device (UVT) cannot be closed unless the UVT coil is excited. To close the breaker, apply voltage to the UVT and wait for 120 milliseconds before closing the breaker. Open an external ON switch after closing the breaker. If the switch remains closed, the breaker cannot be closed again after it has opened.

### 1-2. Opening Operation

Closing a external OFF switch opens the breaker within three seconds.

### 1-3. Tripping Operation

When the overcurrent trip device, undervoltage trip device (UVT), or shunt trip device (SHT) is activated, the breaker trips open automatically and the indicator shows white.

### 1-4. Reset Operation

The tripped breaker can be reset within three seconds by closing an external OFF/RESET switch. When the thermal-magnetic circuit breaker is tripped by the thermal overcurrent trip device, wait for several minutes before resetting the breaker.

## Manual Operation

### 2-1. Closing and Opening/Reset Operation

Pull down the manual operating handle. The breaker will close when it has been open, and open when closed (See Table 1). When the lock plate is drawn out, the manual operating handle cannot be pulled down. To enable manual operation, push in the lock plate securely. The breaker with undervoltage trip device (UVT) cannot be closed unless the UVT coil is excited.

### 2-2. Tripping Operation

Use the trip button to check the breaker function or alarm switch for normal operation.

## Automatic Spring Charge/Discharge

When the manual operating handle is pulled down while control voltage is applied to the Motor Operator, the closing spring is automatically discharged or motor-charged immediately after the handle is retracted. Turning on control voltage after handle operation without control voltage will also cause the same action. This mechanism is provided to make the Operator ready for the next motorised operation.

## [1] Installation Precautions

### ⚠ Caution

- (1) Installation work must be performed by competent persons.
- (2) Prior to commencing any work on the product, open an upstream circuit breaker to isolate all sources of power/voltage. Otherwise, electric shock may result.
- (3) Tighten the terminal screws (M3.5) for the control circuit to the standard tightening torque of 0.88 to 1.18 N • m. A loose screw could result in fire.
- (4) Be sure to connect terminal E to ground. Otherwise, electric shock may result.
- (5) After terminal connection, be sure to attach the transparent cover for the control terminals. Otherwise, electric shock may result.

## [2] Operation

### ⚠ Warning

- (1) Never touch live terminals. Doing so may result in electric shock.

### ⚠ Caution

- (1) When the breaker trips open automatically, remove the cause; then close the breaker. Otherwise fire may result.
- (2) Do not try to perform motorised and manual operation simultaneously. Doing so may result in malfunction or failure of the product.

Table 1

Handle Operating Force N		Handle Operating Angle
ON-OFF	RESET	
170	260	Approx. 150°

## ⚠ Caution

- (1) Permissible range of operating voltage are as follows:  
85 to 110% of the rated voltage  
Undervoltage or overvoltage may cause burnout.
- (2) The motor is rated for short-time. Repeated open/close operation should not exceed 10 times. If repeated continuous open/close operation is inevitable, a pause of at least 15 mins. should be provided after the repetitions of 10 times. Otherwise, burnout could result.
- (3) If the breaker does not close within three seconds after closing operation, turn off the operating voltage. Otherwise burnout could result.
- (4) The dielectric withstand voltage of the Motor Operator is 1500 VAC for one minute between the control circuit group and terminal E. (For control voltage of 24 VDC, the dielectric withstand voltage is 500 VAC for one minute). Overvoltage may result in damage to the Operator.
- (5) Be sure to mount the Motor Operator on the breaker before using the Operator. Sole operation of the Operator may result in damage to it.

### Caution on manual operation

- (1) Do not apply excessive force to the manual operating handle. Doing so may cause damage to the Operator. (see Table 1)

## [3] How to Remove/Mount the Motor Operator

The Motor Operator should not be removed from the breaker except when maintenance, inspection, or the like required the Operator to be removed. To remove the Operator, proceed as follows:

### ⚠ Caution

- (1) Installation work must be performed by competent persons.
- (2) Prior to commencing any work on the product, open an upstream circuit breaker or the like to isolate all sources of power/voltage. Otherwise, electric shock may result.
- (3) Do not touch the handle catch on the back of the Motor Operator. Doing so may cause personal injury.
- (4) Do not remove the cover of the Motor Operator. Doing so may cause personal injury.
- (5) Tighten the terminal screws (M3.5) for the control circuit to the standard tightening torque of 0.88 to 1.18 N.m. A loose screw could result in a fire.
- (6) After terminal connection, be sure to attach the transparent cover for the control terminals. Otherwise, electric shock may result.

- 1) Turn off the Motor Operator. (See Section [2] Operation.)
- 2) Disconnect wires from terminals 4 ((Fig. 1)
- 3) Draw out lock plate item 3 (Fig. 1). Padlock the lock plate.
- 4) Remove the four mounting screws (Fig. 1)
- 5) Draw out the Motor Operator straight to remove it from the breaker.
- 6) To mount the Operator, check if both the indicator and breaker are set to OFF. Then mount the Operator in reverse order.  
If the Operator indicator shows ON, push down the handle catch with the tip of a screwdriver or the like so that the indicator shows OFF, before mounting the Operator on the breaker.
- 7) Perform Close/Open operation a few times to check if the Operator is in order. Be sure to apply the rated voltage to the undervoltage trip device (UVT) during Close/Open operation.

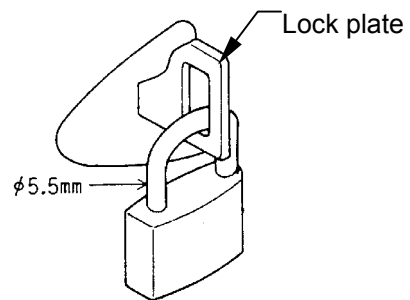


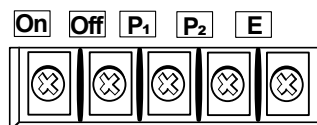
Fig. 2 Lock In/Off

Padlock not supplied.

### Lock-in Off

When the lock plate is drawn out and padlocked, the Motor Operator is locked so that the breaker cannot be closed. When the breaker is closed, the lock plate cannot be drawn out.

### Control circuit terminals



#### Connections

