

# MR41E



## ELECTRICAL OPERATING MECHANISM / UNIVERSAL SMART DRIVE



### MAIN FEATURES

- Reliable, powerful and cost effective
- 6000 units operating worldwide
- Robust design, suitable for harsh environmental conditions (humid, heat, cold, corrosive atmosphere, ..)
- Easy to install: compact, lightweight, reduced installation time
- Real time condition monitoring (native IED, embedded sensors, Plug&Play options)
- Perfect for existing switches motorization or remotorization.

### CUSTOMER BENEFITS

- Universal smart drive: flexible configuration
- Plug and play, easy wiring
- Increased grid safety: early detection of mechanical or electrical failures
- Condition based maintenance (CBM) / predictive maintenance of HV switches and operating mechanism
- Smart grid ready, fully IEC61850 compliant
- On site condition assesment / self diagnosis

### CONTROL & MONITORING

#### COMMUNICATION

|                      | BASE         | OPTION   |
|----------------------|--------------|--|
| <b>Interfaces</b>    | Copper wires | RS232 / RS485 / fiber optics                           |
| <b>Protocol</b>      | Analog       | Digital : S-COM (Modbus RTU, Modbus TCP, IEC61850, ..) |
| <b>Priority mode</b> | Analog       | Dual mode: analog digital automatic switch             |

#### CONDITION MONITORING

|   | BASE                      | OPTION  |
|---|---------------------------|---|
| <b>Torque monitoring of the HV switch</b>                             | -                         | S-TORQUE: low / mean / max torque, alert on output relay / through IT network |
| <b>Light display on the box</b>                                       | -                         | S-LUX   |
| <b>Inside humidity</b>  | -                         | S-WET hygrometer  |
| <b>Information record</b>   | Last operation parameters | S-MEMORY: data recorder   |
| <b>10 leds display for operational informations status</b>            | ✓                         | -   |
| <b>3-digits display with informations code and 10 parameters menu</b> | ✓ S-DIGIT                 | -   |
| <b>Operating mechanism automatic self diagnosis</b>                   | ✓                         |   |

#### More than 90 real-time monitored operational parameters:

|  |                       |  |
|--|-----------------------|--|
| <b>Operation counter</b>                                   | ✓ real time monitored | alert on output relay / through IT network |
| <b>Motor overload</b>                                      | ✓ real time monitored | alert on output relay / through IT network |
| <b>Inside temperature</b>                                  | ✓ real time monitored | alert on output relay / through IT network |
| <b>Low / Mean / Max motor voltage supply</b>               | ✓ real time monitored | alert on output relay / through IT network |
| <b>Low / Mean / Max operating current</b>                  | ✓ real time monitored | alert on output relay / through IT network |
| <b>Presence of auxiliary supply</b>                        | ✓ real time monitored | alert on output relay / through IT network |
| <b>Anticondensation heater health</b>                      | ✓ real time monitored | alert on output relay / through IT network |
| <b>Anticondensation heater power supply</b>                | ✓ real time monitored | alert on output relay / through IT network |
| <b>Operating time</b>                                      | ✓ real time monitored | alert on output relay / through IT network |
| <b>Interlock</b>   | ✓ real time monitored | alert on output relay / through IT network |
| <b>Selector position (local/ remote/out of use/manual)</b> | ✓ real time monitored | alert on output relay / through IT network |
| <b>Operation in progress (opening / closing)</b>           | ✓ real time monitored | alert on output relay / through IT network |

...Ask for your specific need



## TECHNICAL FEATURES

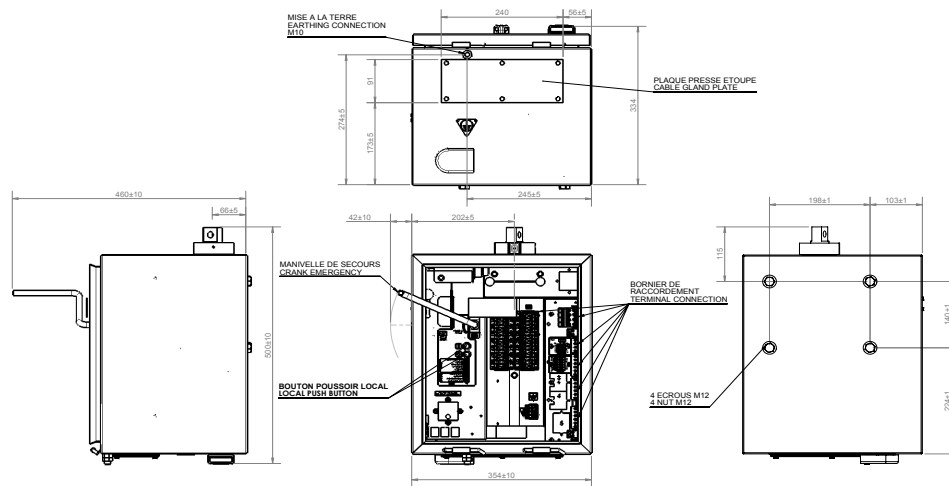
### MECHANICAL

|                                | BASE                                       | OPTION                                 |
|--------------------------------|--|--|
| Drive / Transmission mechanism | Electrical motor, non-reversible mechanism | -                                      |
| Operating angle                | 90°  | -                                      |
| Operating time                 | <10 s                                      | other value upon request               |
| Output shaft position          | left / right / vertical                    | -                                      |
| Output torque                  | 1 000 N.m                                  | 2 000 N.m                              |
| Mechanical endurance           | 2000 cycles                                | 10000 cycles, other value upon request |
| Operating temperature          | - 25°C / + 40°C                            | On request                             |
| Dimensions                     | 360 x 500 x 340 mm                         | -                                      |
| Weight                         | 25 kg                                      | -                                      |
| Protection degree              | IP56                                       | -                                      |

### ELECTRICAL

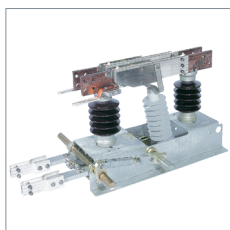
|                                | BASE                           | OPTION                           |
|--------------------------------|--------------------------------|----------------------------------|
| <b>Motor</b>                   |                                |                                  |
| Power supply voltage           | 48 to 220 VDC / 60 to 400 VAC  | On request                       |
| Frequency range                | DC / 16 Hz 2/3 / 50 Hz /60 Hz  |                                  |
| Nominal power                  | 300 W                          |                                  |
| Auxiliary supply voltage       | 48 to 220 VDC / 110 to 230 VAC | On request                       |
| Auxiliary Contacts O/C NO/NC   | 80 / 8C                        | xO / xC / xNO / xNC upon request |
| <b>Anticondensation heater</b> |                                |                                  |
| Supply voltage                 | 230VAC                         | 110 VDC                          |
| Nominal power                  | 25W                            | 100W                             |
| Additional output relays       | 2                              | up to 5                          |
| EMC                            | IEC61000                       | On request                       |

## OUTLINE DRAWING

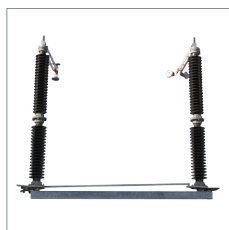


The drawing above is given for information only. Detailed layout and digital drawing available on request.

## RELATED EQUIPMENT



SBE  
VERTICAL BREAK  
DISCONNECTOR



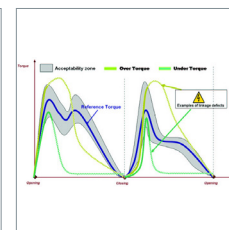
SR16200  
CENTER BREAK  
DISCONNECTOR



MR164E  
UNIVERSAL SMART  
DRIVE



S-COM  
REMOTE CONTROL  
BOARD



S-TORQUE  
MECHANICAL FAILURE  
AND POSITION  
DETECTION



S-OFT  
PORTABLE  
DIAGNOSTIC TOOL