

HUMAN & ELECTRICAL SAFETY

BASED ON GROUNDING
AND INTERLOCKING

RAIL VEHICLES

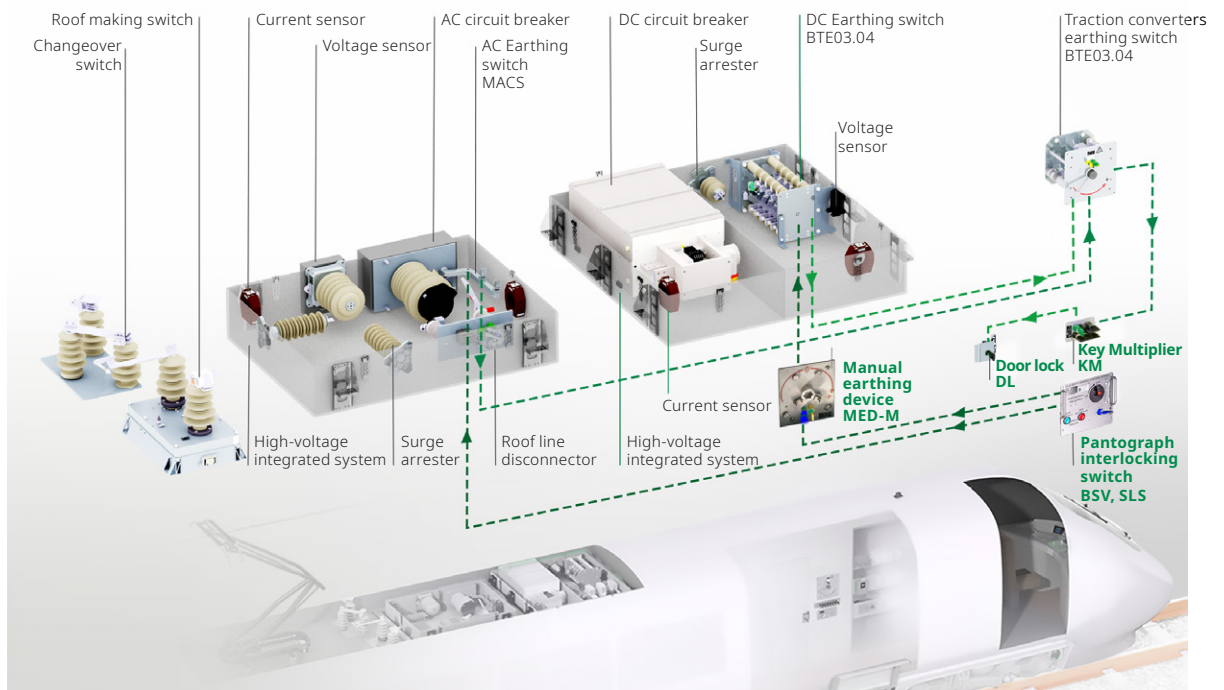


GENERAL INFORMATION

Sécheron takes its commitment to protecting people and property very seriously when designing components and solutions to switch and protect high-voltage circuits. We have been serving the railway for decades, acquiring expert knowledge of our customers' needs to innovate electrical safety solutions valued for their performance, safety, and low maintenance.

Our electrical safety solutions for railway vehicles include many of the devices required to isolate and earth the high-voltage equipment. We take a simple, step-by-step approach where one safety device is triggered only when the previous device in the traction chain has been locked in the earthed position. This principle is implemented through a cascade of security keys and associated locks.

APPLICATIONS

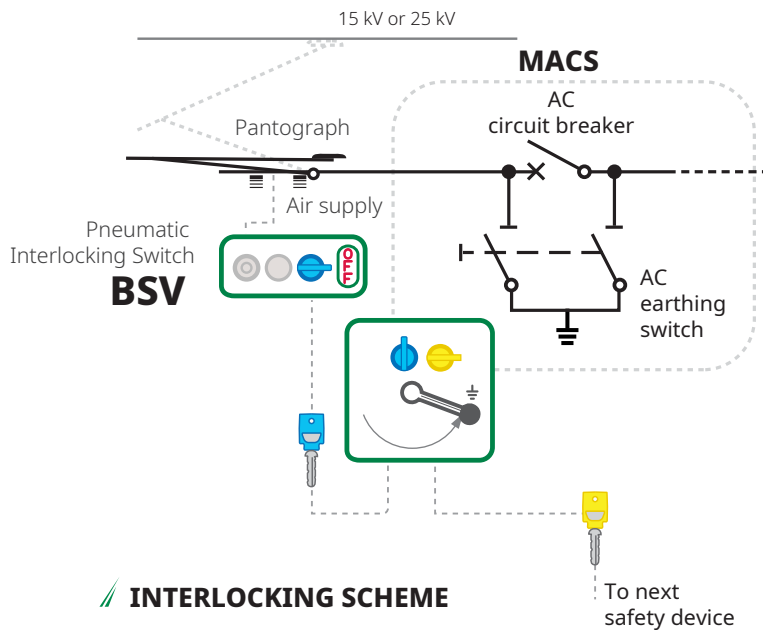


All equipment indicated with a product name are in Sécheron's scope of supply.

AC RAIL VEHICLES

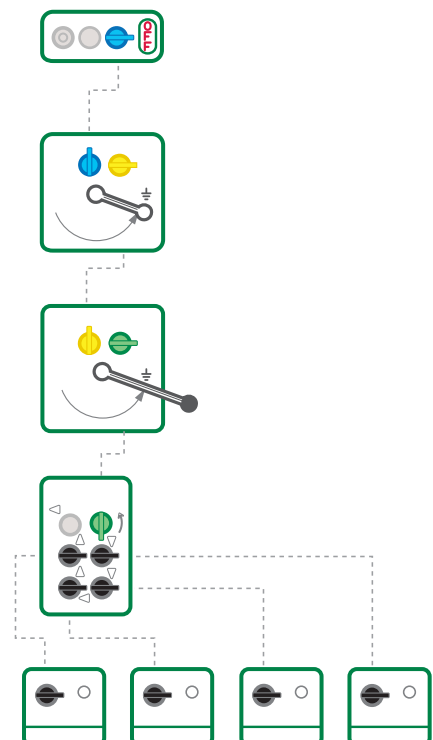
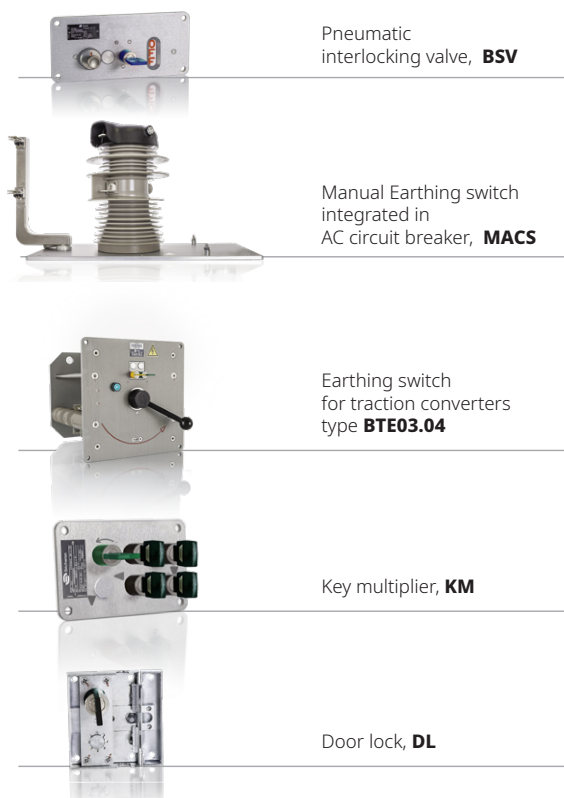
AC CIRCUIT BREAKER (MACS) WITH MANUAL EARTHING SWITCH

EXAMPLE OF ELECTRIC SCHEME



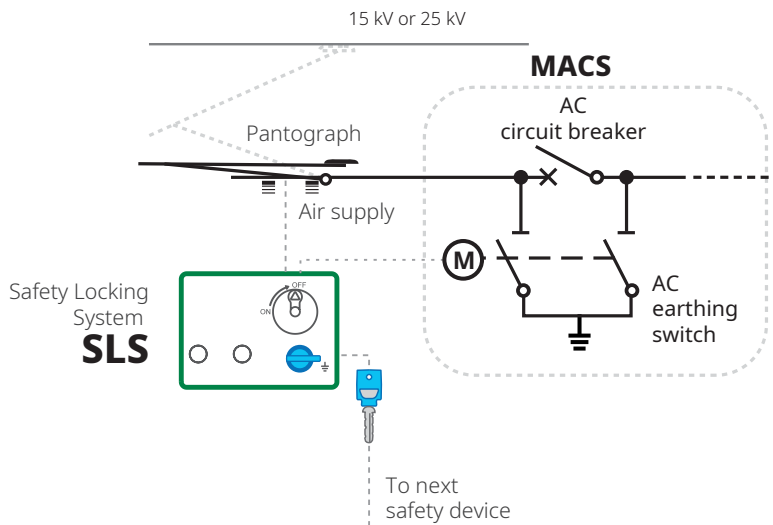
This interlocking scheme refers to AC rail vehicles having a single pantograph and AC circuit breaker. Vehicles with 2 pantographs and 2 AC circuit breakers will have a different interlocking scheme.

INTERLOCKING SCHEME



AC CIRCUIT BREAKER (MACS) WITH ELECTRIC EARTHING SWITCH

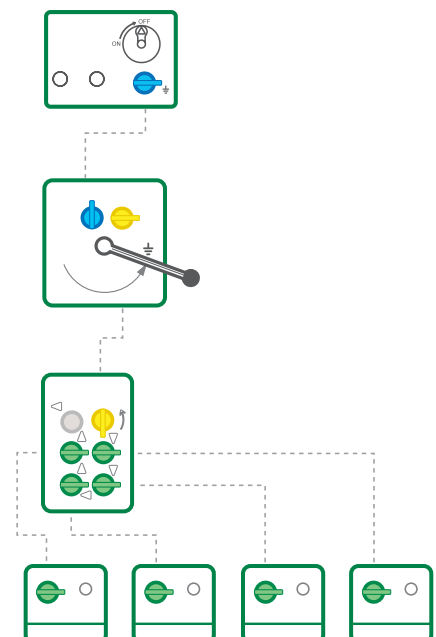
EXAMPLE OF ELECTRIC SCHEME



Electric earthing switch is sometimes used on long train configurations or if the vehicle is equipped with a roof AC MODBOX®.

This interlocking scheme refers to AC rail vehicles having a single pantograph and AC circuit breaker. Vehicles with 2 pantographs and 2 AC circuit breakers will have a different interlocking scheme.

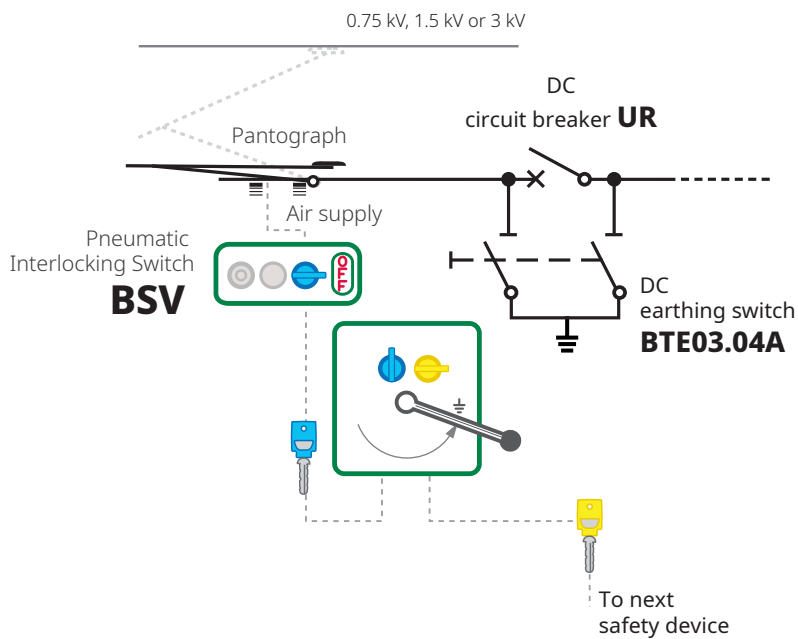
INTERLOCKING SCHEME



DC RAIL VEHICLES

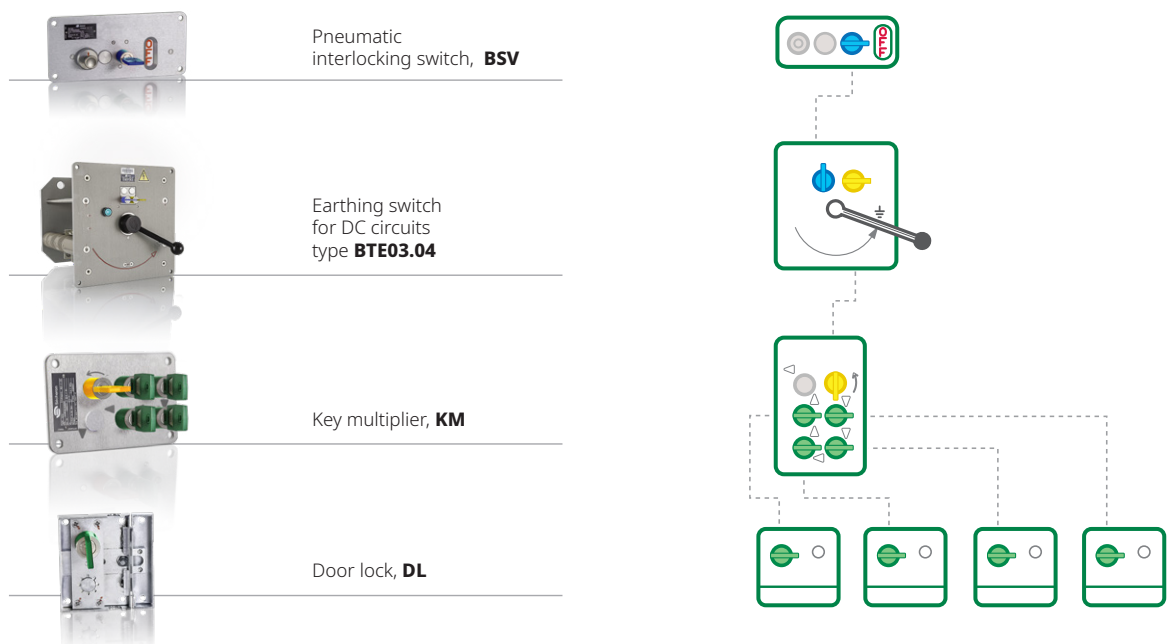
DC CIRCUIT BREAKER (UR) WITH MANUAL EARTHING SWITCH

EXAMPLE OF ELECTRIC SCHEME



This interlocking scheme refers to DC rail vehicles having a single pantograph and DC circuit breaker. Vehicles with 2 pantographs and 2 DC circuit breakers will have a different interlocking scheme..

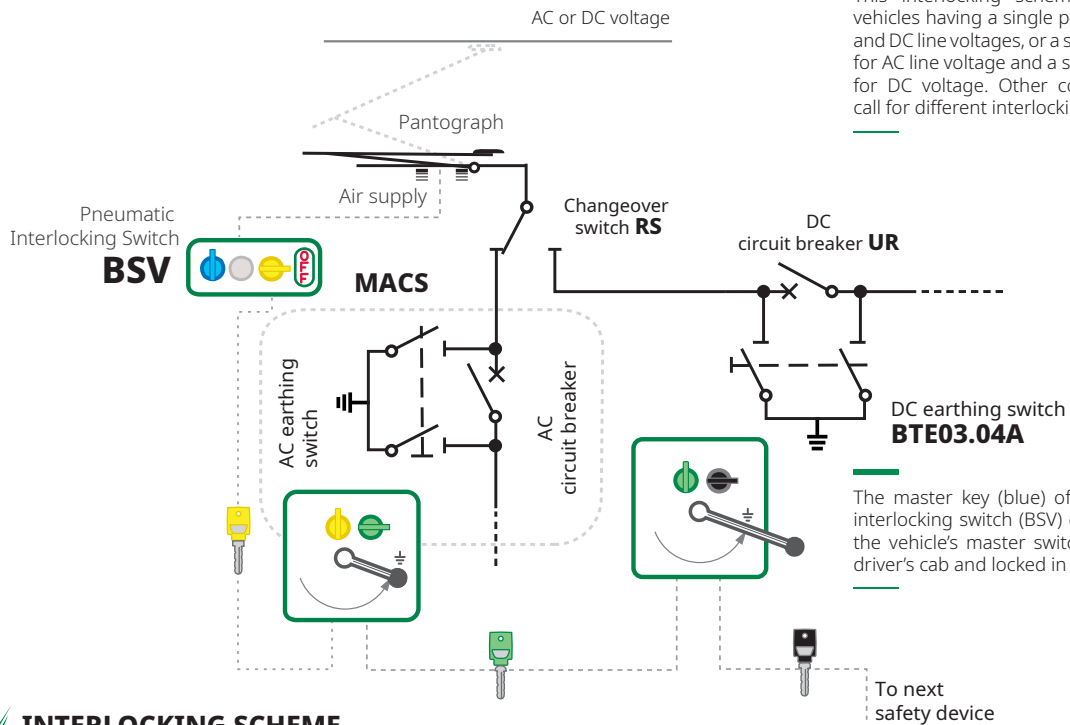
INTERLOCKING SCHEME



AC/DC MULTISYSTEM RAIL VEHICLES

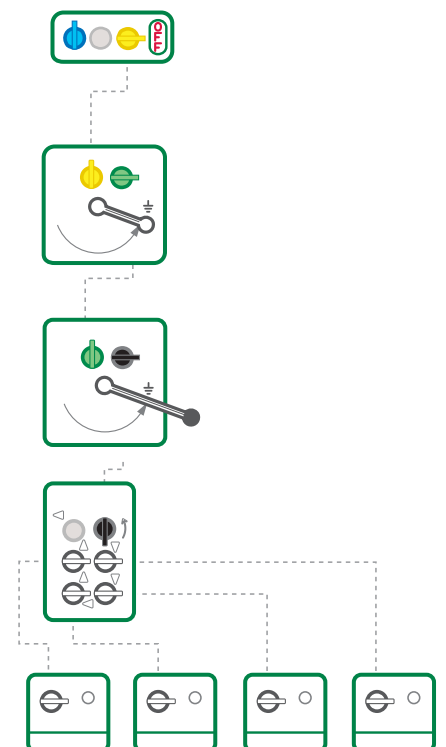
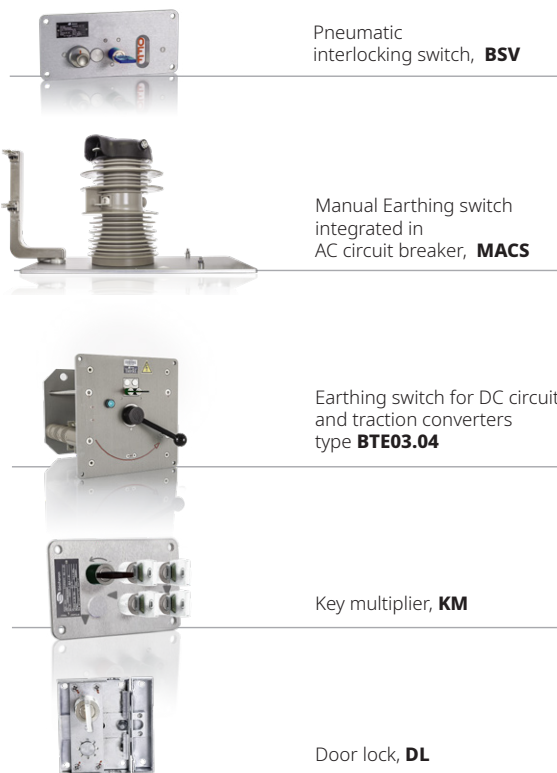
VEHICLE CONFIGURATION WITH MANUAL EARTHING SWITCHES

EXAMPLE OF ELECTRIC SCHEME



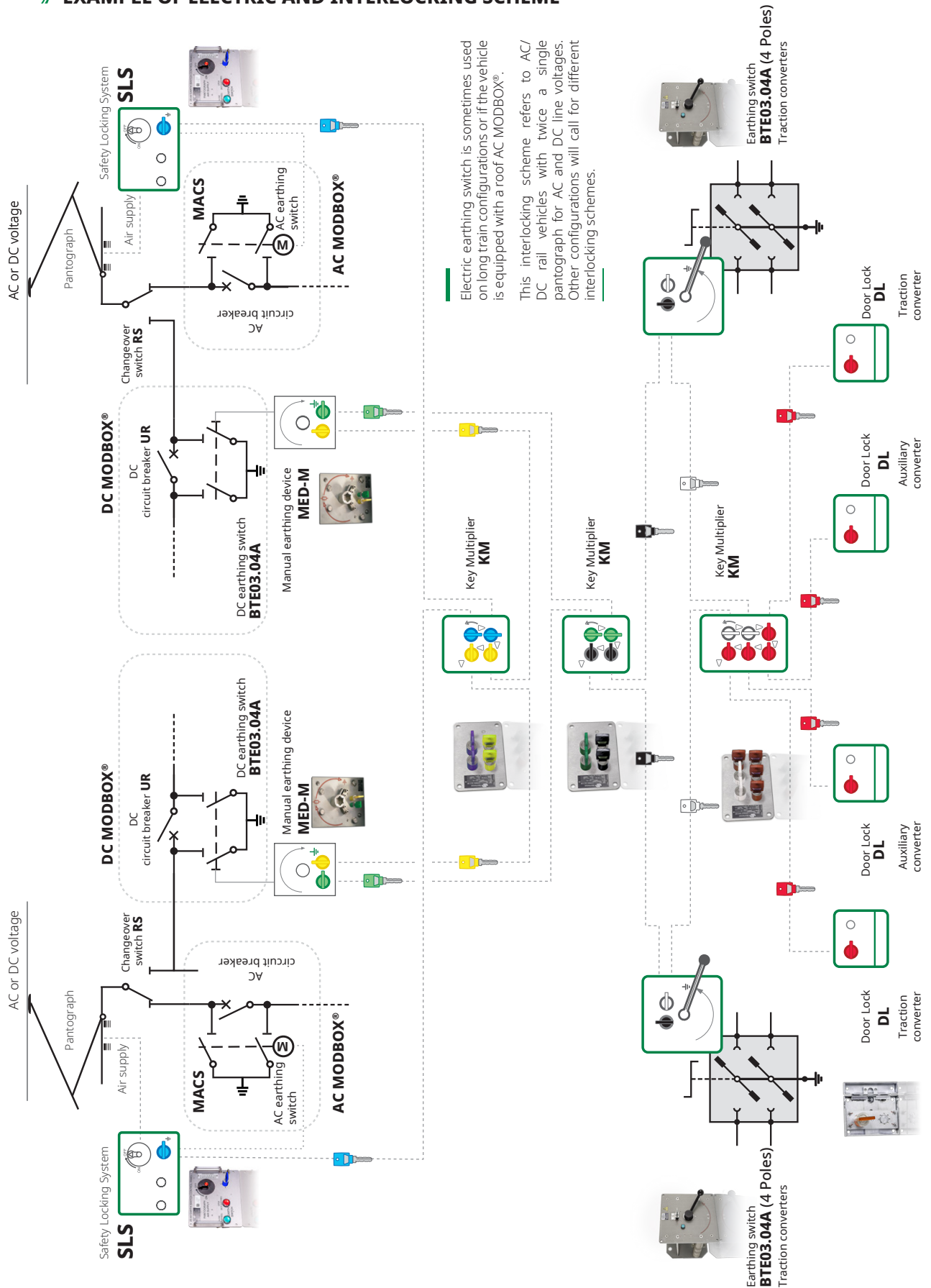
This interlocking scheme refers to rail vehicles having a single pantograph for AC and DC line voltages, or a single pantograph for AC line voltage and a single pantograph for DC voltage. Other configurations will call for different interlocking schemes.

INTERLOCKING SCHEME



RAIL VEHICLES WITH AC & DC MODBOX®

EXAMPLE OF ELECTRIC AND INTERLOCKING SCHEME

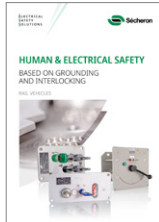


Electric earthing switch is sometimes used on long train configurations or if the vehicle is equipped with a roof AC MODBOX®.

This interlocking scheme refers to AC/DC rail vehicles with twice a single pantograph for AC and DC line voltages. Other configurations will call for different interlocking schemes.

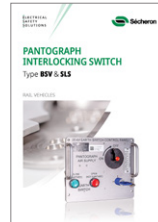
SAFETY INTERLOCKING DEVICES

BROCHURE REFERENCES



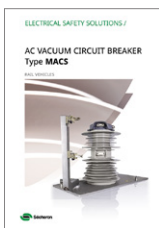
HUMAN & ELECTRIC SAFETY BASED ON GROUNDING AND INTERLOCKING

RAIL VEHICLES
SG480329BEN



PANTOGRAPH INTERLOCKING SWITCH Type BSV, SLS

RAIL VEHICLES
SA002164TEN



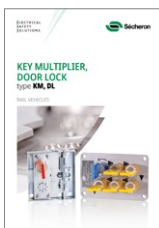
AC VACUUM CIRCUIT BREAKER Type MACS

RAIL VEHICLES
SG325101BEN



EARTHING SWITCH Type BTE03.04

RAIL VEHICLES
SP1880136BEN



KEY MULTIPLIER, DOOR LOCK Type KM and DL

RAIL VEHICLES
SA011495BEN



HIGH VOLTAGE INTEGRATED SOLUTIONS Type MODBOX®

RAIL VEHICLES
SG580044BEN



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