

12kV and 24kV enclosed switch

Product approval and audit form

Endeavour Energy use only:

Product approval officer:..... Date received:.....

Application ID no:..... Approval no:.....

Manufacturer:

Contact person and details:

.....

.....

Manufacturer's signature: Date:

Note to applicant: This form is to be submitted with the corresponding Product approval application form.

It shall be the responsibility of the person/organisation requesting the approval for a particular type of product to be used in Endeavour Energy's network, to have this form completed by the manufacturer and returned to Endeavour Energy for examination. This form shall contain measured values and page numbers as found on the product test reports. The information provided may be used for future audit purposes.

12kV and 24kV enclosed switch		
1. Manufacturer details		
Manufacturer		
Plant address		
Reference drawings		
Manufacturer's design no.		
Generic description, for example: Code/make/ref/type		

2. <i>Guaranteed performance</i>		Test results (actual values)		Page no.
		12kV	24kV	
Standards employed				
For load break switch				
Equipment specifications				
Rated Voltage	U _r			
Highest system voltage				
Rated frequency	f _r			
Indoor/outdoor				
No. of poles				
Rated current	I _r			
Rated short circuit withstand current	I _k			
Rated duration of short circuit	t _k			
Rated peak withstand current	I _p			
Rated mainly active load breaking current	I ₁			
Rated closed loop breaking current	I _{2a}			
Rated no load transformer breaking current	I ₃			
Rated cable charging breaking current	I _{4a}			
Rated line charging breaking current	I _{4b}			
Rated short circuit making current	I _{ma}			
Insulation level: Power frequency withstand: - ph-E - Across the open contacts				
Lightning impulse withstand				
General purpose switch class Mechanical endurance offload on/off operations				
Current interrupting medium				
Insulation medium				
Operation - manual/motor				
Total length of break on each pole - mm				
Type of main contact				
Type of arcing contact				
Type of arc control device				
Pressure of SF ₆ gas (if applicable) - kPa				
Number of tanks				
Name of SF ₆ supplier and type number				
Quantity of SF ₆ per switch - in litres/in kg				
Protective finish applied to outside of the tank				

Protective finish applied to inside of the tank			
Bushing:			
- Material			
- Colour			
- Total external creepage distance			
- Protected creepage distance			
- Flashover length			
- Maximum space available for CTs			
- Are bushings inter-changeable			
Maximum discharge level - pC			
Open time:			
- with zero current - seconds			
- at rated breaking current - seconds			
Arc duration time at rated breaking current - cycles			
Closing time - seconds			
Communication (for automated switches only)			
RS232 communication port supports asynchronous V.24 functionality	Yes ☐	No ☐	
Modem interfaces with Tait 2000 UIT radio or equivalent	Yes ☐	No ☐	
Can disconnect the RS232 to modem interface to allow local protocol and communication troubleshooting	Yes ☐	No ☐	
Remote communications for the AR support either MITS MD3 or MITS DNP 3.0 –2000 up to and including level 3	Yes ☐	No ☐	
Does the radio have a stand down mode	Yes ☐	No ☐	
Power supply (for automated switches only)			
Supply voltage to open/close - V			
Aux supply provided by - battery/capacitor			
Battery/ies have a <i>watchdog</i> feature			
Communication system is capable of sending a <i>low volt</i> alarm	Yes ☐	No ☐	
All batteries are monitored	Yes ☐	No ☐	
All batteries have <i>low battery</i> alarm	Yes ☐	No ☐	
Maintenance free life - years			
Overall dimensions and weight			
Overall width/height/depth - mm			
Weight - kg			
Operating mechanism (for automated switches only)			
Type			
Country of origin			

Rated supply voltage of close and open coils - V			
Rated supply voltage of close spring motor - V			
Max spring charging current - A			
Rated supply voltage of aux. circuits - V			
Mode of closing			
Power required to open - W			
Power required to close - W			
Dimension of control cubicle (mm)			
Weight of control cubicle - kg			
Dehumidifier rating and thermal density			
Control wiring			
Wiring complies with AS3000	Yes ☐	No ☐	
Wiring CSA complies	Yes ☐	No ☐	
Wiring colour:			
Active			
Neutral			
+Ve dc			
-Ve dc			
Environmental effects			
Max noise level during operation at one (1) metre - DB			
Max RIV at one (1) MHz - V/kV			
Corona extinction voltage - KV			
Degree of protection, cubicle - IP rating			
Surface finish			
Type of finish - galvanised/painted			
Finished colour			
List of external parts that is not stainless steel			
List types of stainless steel used on external parts (for example, SS 304, SS316, SS302)			
Recommended maintenance intervals			
Recommended life expectancy - years/operations			
Operating mechanism - years/operations			
Contacts and interrupting system - years/operations			
Control and other ancillary items - years/operations			
Reliability/condition-based maintenance system available	Yes ☐	No ☐	
Warranty period - years/operations			

Type test name (for each switch type and voltage category)	Test reports submitted	
Dielectric tests including lightning impulse withstand tests, power frequency voltage withstands tests, and power frequency withstand test on auxiliary circuits	Yes ☐	No ☐
Temperature rise test	Yes ☐	No ☐
Measurement of resistance of the main circuit	Yes ☐	No ☐
Short time withstand current and peak current withstand current tests	Yes ☐	No ☐
Tests to prove ability of the switch to make and break the specified currents	Yes ☐	No ☐
Tests to prove satisfactory mechanical operation and endurance	Yes ☐	No ☐
Verification of the protection	Yes ☐	No ☐
Tightness tests	Yes ☐	No ☐
Electromagnetic compatibility tests	Yes ☐	No ☐
Partial discharge test	Yes ☐	No ☐
Electromagnetic compatibility test	Yes ☐	No ☐
Details to be submitted		
Switch technical information booklet (ref. no)		
General arrangement drawings (provide drawing numbers)		
▪ switch		
▪ Mechanism box		
▪ External VT, if applicable		
▪ Any other item		
Schematic diagrams		
Auxiliary power supply schematic (provide drawing no's)		
▪ with VT		
▪ with 240V 1 ph 50 Hz aux supply		
Communication details to specifications	Yes ☐	No ☐
Painting details	Yes ☐	No ☐
List of recommended spare parts	Yes ☐	No ☐
List of special tools/tackles required for operation	Yes ☐	No ☐
Installation, operation and maintenance manuals, and all drawings.	Yes ☐	No ☐
Manufacturer/supplier certifies that the information (O and M manual and the drawings) provided	Yes ☐	No ☐

against this approval request can be uploaded to Endeavour Energy's Standards website for use by staff and Accredited Service Providers (password protected)	
Company profile	Yes ☐ No ☐
Manufacturing capabilities	Yes ☐ No ☐
Product reference list	Yes ☐ No ☐
Whether supplied to Endeavour Energy previously	Yes ☐ No ☐
Any other relevant details	