



JABATAN KERJA RAYA MALAYSIA
CAWANGAN KEJURUTERAAN ELEKTRIK
UNIT PENSIJILAN BAHAN DAN STANDARD

TECHNICAL INFORMATION

EARTH LEAKAGE RELAY

A. COMPANY INFORMATION					
COMPANY NAME :					
ADDRESS :					
POSTCODE :		TELEPHONE NO. :			
STATE :		COMPANY EMAIL :			
ISO CERTIFICATION				REGISTRATION NO.	SCOPE
1. ISO 9001	<input type="checkbox"/>	YES	<input type="checkbox"/>	NO	
2. ISO 14001	<input type="checkbox"/>	YES	<input type="checkbox"/>	NO	
3. ISO 50001	<input type="checkbox"/>	YES	<input type="checkbox"/>	NO	
4. ISO	<input type="checkbox"/>	YES	<input type="checkbox"/>	NO	

B. PRODUCT INFORMATION					
BRAND NAME :					
MODEL	VARIANT / PART NO. (IF APPLICABLE)	MOUNTING TYPE (FLUSH PANEL/DIN RAIL)	MANUFACTURER NAME	MANUFACTURER ADDRESS	COUNTRY OF ORIGIN
1.					
2.					
3.					
4.					
5.					
6.					

Note:

Please cross whichever applicable and fill in the required blanks.

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C. COMPLIANCE REQUIREMENTS

NO.	REQUIREMENTS	REMARKS	YES	NO
1.	The rated voltage of input and energizing voltage is 230/400 VAC, 50 Hz.		<input type="checkbox"/>	<input type="checkbox"/>
2.	The minimum operating voltage should be less than or equal to 90 VAC, and the maximum operating voltage should be greater than or equal to 250 VAC.		<input type="checkbox"/>	<input type="checkbox"/>
3.	Ambient temperature of 40 °C and above.		<input type="checkbox"/>	<input type="checkbox"/>
4.	Relative humidity up to 95%.		<input type="checkbox"/>	<input type="checkbox"/>
5.	Flushed panel mounting type, or		<input type="checkbox"/>	<input type="checkbox"/>
6.	DIN rail mounting type.		<input type="checkbox"/>	<input type="checkbox"/>
7.	The test report shall comply with: <ul style="list-style-type: none"> • "Impulse Voltage Test" of IEC 60255-27. • "AC/DC Dielectric Voltage" of IEC 60255-27. • "Electrostatic Discharge Immunity Test" of IEC 60255-26. • "Electrical Fast Transient/Burst Immunity Test" of IEC 60255-26. • "Surge Immunity Test" of IEC 60255-26. 		<input type="checkbox"/>	<input type="checkbox"/>
8.	The ELR shall be provided with: <ul style="list-style-type: none"> • Test button for fault simulation. • Earth leakage LED indicator. • Reset button. • Protection against nuisance tripping due to transient voltage and DC sensitive. • Adjustable current sensitivity. • Adjustable time delay. • Matching balanced core current transformer. • Shunt trip contact. 		<input type="checkbox"/>	<input type="checkbox"/>
9.	The selectivity range for current sensitivity is to the maximum value of 30 A.		<input type="checkbox"/>	<input type="checkbox"/>
10.	The selectivity range for time delay is to the maximum value of 20 s.		<input type="checkbox"/>	<input type="checkbox"/>

Note:

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D. SPECIFICATIONS

1. GENERAL

MODEL	DIMENSION (WIDTH x HEIGHT x DEPTH)	RATED AC VOLTAGE (V)	OPERATING AC VOLTAGE (V)	RATED FREQUENCY (Hz)	OPERATING FREQUENCY (Hz)	RATED AMBIENT TEMPERATURE (°C)	RELATIVE HUMIDITY (%)	IP RATING	RESIDUAL CURRENT TYPE (A/AC)	RESISTANCE TO UNWANTED TRIPPING (YES/NO)	WARRANTY PERIOD (YEARS)	LIFE EXPECTANCY (YEARS)	PRICE (RM)
1.													
2.													
3.													
4.													
5.													
6.													

TECHNICAL INFORMATION

EARTH LEAKAGE RELAY

2. INPUT/OUTPUT

MODEL	DISPLAY PANEL (YES/NO)	PHASE CURRENT MEASUREMENT DISPLAY (YES/NO)	ZCT MODEL	ZCT INNER DIAMETER (mm)	NOS. OF DIGITAL INPUT	TYPE OF DIGITAL INPUT	DIGITAL INPUT RATED VOLTAGE (V)	NOS. OF PROGRAMMABLE OUTPUT CONTACT	OUTPUT CONTACT RATED VOLTAGE (V)	OUTPUT CONTACT CONTINUOUS CARRY (A)	ALARM CONTACT (YES/NO)	SELF-TEST/DIAGNOSTIC (YES/NO)	POWER SUPPLY FAILURE ALARM (YES/NO)	DIGITAL RESET (YES/NO)	AUTO RECLOSE (YES/NO)
1.			1.	1.											
2.			2.	2.											
3.			3.	3.											
4.			4.	4.											
5.			5.	5.											
6.			6.	6.											
6.			7.	7.											

Note:

Please ensure the models declared within this page are in exact match as in page 3.

TECHNICAL INFORMATION

EARTH LEAKAGE RELAY

3. DATA LOGGING

MODEL	PASSWORD PROTECTION (YES/NO)	EVENT RECORD (YES/NO)	NOS. OF EVENT RECORD	SETTING CHANGES – EVENT RECORD (YES/NO)	FAULT RECORD (YES/NO)	NOS. OF FAULT RECORD	REAL-TIME CLOCK/RTC (YES/NO)	TIMESTAMP (YES/NO)	DURATION FOR INTERNAL CLOCK RETENTION DURING POWER INTERRUPTION (HOURS)
1.									
2.									
3.									
4.									
5.									
6.									

Note:

Please ensure the models declared within this page are in exact match as in page 3.

TECHNICAL INFORMATION

EARTH LEAKAGE RELAY

4. COMMUNICATION

MODEL	REMOTE COMMUNICATION SUPPORT (YES/NO)	CLOSE COMMUNICATION SUPPORT (YES/NO)	BUILT-IN COMMUNICATION INTERFACE (YES/NO)	EXTENSIBLE WITH EXTERNAL COMMUNICATION MODULE (YES/NO)	COMMUNICATION INTERFACE TYPE	COMMUNICATION PROTOCOL TYPE	EQUIPPED WITH MONITORING & MANAGEMENT SOFTWARE (YES/NO)	NAME OF MONITORING & MANAGEMENT SOFTWARE	COMMUNICATION DEVICE (PC/MOBILE PHONE/REMOTE TERMINAL & ETC.)
1.									
2.									
3.									
4.									
5.									
6.									

Note:

Please ensure the models declared within this page are in exact match as in page 3.

TECHNICAL INFORMATION

EARTH LEAKAGE RELAY

5. OPERATING CHARACTERISTICS

MODEL	STAGES	TIME DELAY SETTING RANGES	DEPENDENT TIME OPERATING CURVES	EARTH LEAKAGE CURRENT SETTING RANGES
0.	LOW SET	TMS FOR IDMT: 0.01 – 1 (IF APPLICABLE) DELAY FOR DT: 0.01s – 100s	NONE, NORMAL INVERSE 3/10, VERY INVERSE & EXTREMELY INVERSE	10% - 250% OF RATED CURRENT
	HIGH SET	TMS FOR IDMT: 0.01 – 1 (IF APPLICABLE) DELAY FOR DT: 0.01s – 100s	NONE, NORMAL INVERSE 3/10, VERY INVERSE & EXTREMELY INVERSE	10% - 2000% OF RATED CURRENT
1.	LOW SET			
	HIGH SET			
2.	LOW SET			
	HIGH SET			
3.	LOW SET			
	HIGH SET			

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EARTH LEAKAGE RELAY

MODEL	STAGES	TIME DELAY SETTING RANGES	DEPENDENT TIME OPERATING CURVES	EARTH LEAKAGE CURRENT SETTING RANGES
4.	LOW SET			
	HIGH SET			
5.	LOW SET			
	HIGH SET			
6.	LOW SET			
	HIGH SET			

TECHNICAL INFORMATION

EARTH LEAKAGE RELAY

E. TYPE TESTS

NO.	TEST DESCRIPTION	STANDARD	TEST STANDARD	TEST REPORT NO.	PAGE	YES	NO
1	Functional & Accuracy Tests						
1.1	Test Reference Condition	IEC 60255-1	IEC 60255-1			<input type="checkbox"/>	<input type="checkbox"/>
1.2	Dimensions of Structure & Visual Inspection	IEC 60255-1	IEC 60297-3-101			<input type="checkbox"/>	<input type="checkbox"/>
1.3	Burden Test for Current Transformers	IEC 60255-1	IEC 60255-1			<input type="checkbox"/>	<input type="checkbox"/>
1.4	Burden Test for AC Power Supply	IEC 60255-1	IEC 60255-1			<input type="checkbox"/>	<input type="checkbox"/>
1.5	Burden Test for DC Power Supply	IEC 60255-1	IEC 60255-1			<input type="checkbox"/>	<input type="checkbox"/>
1.6	Burden Test for Binary Input	IEC 60255-1	IEC 60255-1			<input type="checkbox"/>	<input type="checkbox"/>
1.7	Contact Performance Test	IEC 60255-1	IEC 60255-1			<input type="checkbox"/>	<input type="checkbox"/>
1.8	Communication Requirements	IEC 60255-1	IEC 60255-1			<input type="checkbox"/>	<input type="checkbox"/>
1.9	Determination of Steady State Errors to the Current	IEC 60255-151	IEC 60255-151			<input type="checkbox"/>	<input type="checkbox"/>
1.10	Determination of Steady State Errors to the Start & Operate Time	IEC 60255-151	IEC 60255-151			<input type="checkbox"/>	<input type="checkbox"/>
1.11	Determination of Steady State Errors to the Reset Time	IEC 60255-151	IEC 60255-151			<input type="checkbox"/>	<input type="checkbox"/>
1.12	Determination of Transient Performance (Transient Overreach)	IEC 60255-151	IEC 60255-151			<input type="checkbox"/>	<input type="checkbox"/>
1.13	Determination of Transient Performance (Overshoot Time)	IEC 60255-151	IEC 60255-151			<input type="checkbox"/>	<input type="checkbox"/>
1.14	Determination of Transient Performance (Time Varying Value of the Current for Dependent Time Relay)	IEC 60255-151	IEC 60255-151			<input type="checkbox"/>	<input type="checkbox"/>

Note:

Please cross whichever applicable and fill in the required blanks.

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NO.	TEST DESCRIPTION	STANDARD	TEST STANDARD	TEST REPORT NO.	PAGE	YES	NO
2	Mechanical Environmental Tests						
2.1	Vibration Response Test (sinusoidal) ↳ Class	IEC 60255-27	IEC 60255-21-1			<input type="checkbox"/>	<input type="checkbox"/>
2.2	Vibration Endurance Test (sinusoidal) ↳ Class	IEC 60255-27	IEC 60255-21-1			<input type="checkbox"/>	<input type="checkbox"/>
2.3	Shock Response Test ↳ Class	IEC 60255-27	IEC 60255-21-2			<input type="checkbox"/>	<input type="checkbox"/>
2.4	Shock Withstand Test ↳ Class	IEC 60255-27	IEC 60255-21-2			<input type="checkbox"/>	<input type="checkbox"/>
2.5	Bump Test ↳ Class	IEC 60255-27	IEC 60255-21-2			<input type="checkbox"/>	<input type="checkbox"/>
2.6	Seismic/Quake Test ↳ Class	IEC 60255-27	IEC 60255-21-3			<input type="checkbox"/>	<input type="checkbox"/>
3	Climatic Tests						
3.1	Dry-heat test- operational (Test Bd) ↳ Temp. ↳ Humid.	IEC 60255-27	IEC 60068-2-2			<input type="checkbox"/>	<input type="checkbox"/>
3.2	Cold test - operational (Test Ad) ↳ Temp.	IEC 60255-27	IEC 60068-2-1			<input type="checkbox"/>	<input type="checkbox"/>
3.3	Dry heat test at maximum storage temperature (Test Bb) ↳ Temp. ↳ Humid.	IEC 60255-27	IEC 60068-2-2			<input type="checkbox"/>	<input type="checkbox"/>
3.4	Cold test at minimum storage temperature (Test Ab) ↳ Temp.	IEC 60255-27	IEC 60068-2-1			<input type="checkbox"/>	<input type="checkbox"/>

Note:

Please cross whichever applicable and fill in the required blanks.
(e.g. Class II , Temp. 55°C , Humid. 95%)

TECHNICAL INFORMATION

EARTH LEAKAGE RELAY

NO.	TEST DESCRIPTION	STANDARD	TEST STANDARD	TEST REPORT NO.	PAGE	YES	NO
3	Climatic Tests (Cont.)						
3.5	Change of temperature (Test Nb)	IEC 60255-1	IEC 60068-2-14			<input type="checkbox"/>	<input type="checkbox"/>
3.6	Damp-heat test (Test Cab) ↳ Temp. ↳ Humid.	IEC 60255-27	IEC 60068-2-78			<input type="checkbox"/>	<input type="checkbox"/>
3.7	Cyclic temperature with humidity test (Test Db)	IEC 60255-27	IEC 60068-2-30			<input type="checkbox"/>	<input type="checkbox"/>
4	Safety Tests						
4.1	Accessible Part Tests ↳ IP XX	IEC 60255-27	IEC 60529			<input type="checkbox"/>	<input type="checkbox"/>
4.2	Dust/Water Ingress Protection Tests ↳ IP	IEC 60255-27	IEC 60529			<input type="checkbox"/>	<input type="checkbox"/>
4.3	Clearances and Creepage Distances	IEC 60255-27	IEC 60255-27			<input type="checkbox"/>	<input type="checkbox"/>
4.4	Impulse Voltage	IEC 60255-27	IEC 60255-27			<input type="checkbox"/>	<input type="checkbox"/>
4.5	AC/DC Dielectric Voltage	IEC 60255-27	IEC 60255-27			<input type="checkbox"/>	<input type="checkbox"/>
4.6	Insulation Resistance	IEC 60255-27	IEC 60255-27			<input type="checkbox"/>	<input type="checkbox"/>
4.7	Protective Bonding Resistance	IEC 60255-27	IEC 60255-27			<input type="checkbox"/>	<input type="checkbox"/>
4.8	Protective Bonding Continuity	IEC 60255-27	IEC 60255-27			<input type="checkbox"/>	<input type="checkbox"/>
4.9	Single-fault Condition	IEC 60255-27	IEC 60255-27			<input type="checkbox"/>	<input type="checkbox"/>
4.10	Reverse Polarity & Slow Ramp	IEC 60255-27	IEC 60255-27			<input type="checkbox"/>	<input type="checkbox"/>
4.11	Maximum Temperature of Parts & Materials	IEC 60255-27	IEC 60255-27			<input type="checkbox"/>	<input type="checkbox"/>
4.12	Flammability of Insulating Materials, Components & Fire Enclosures	IEC 60255-27	IEC 60255-27			<input type="checkbox"/>	<input type="checkbox"/>

Note:

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(e.g: Class II , Temp. 55°C , Humid. 95%)

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NO.	TEST DESCRIPTION	STANDARD	TEST STANDARD	TEST REPORT NO.	PAGE	YES	NO
4	Safety Tests (Cont.)						
4.13	Thermal Short Time	IEC 60255-27	IEC 60255-27			<input type="checkbox"/>	<input type="checkbox"/>
4.14	Output Relay, Make & Carry	IEC 60255-27	IEC 60255-27			<input type="checkbox"/>	<input type="checkbox"/>
4.15	Routine Testing	IEC 60255-27	IEC 60255-27			<input type="checkbox"/>	<input type="checkbox"/>
5	Electromagnetic Compatibility (EMC) Tests						
5.1	Radiated Emission Test ↳ Class	IEC 60255-26	CISPR 11:2009			<input type="checkbox"/>	<input type="checkbox"/>
5.2	Conducted Emission Test ↳ Ports ² enclosure, supply, comm, I/O, functional earth ↳ Class	IEC 60255-26	CISPR 22:2008			<input type="checkbox"/>	<input type="checkbox"/>
5.3	Electrostatic Discharge Immunity Test ↳ Ports ² enclosure, supply, comm, I/O, functional earth	IEC 60255-26	IEC 61000-4-2			<input type="checkbox"/>	<input type="checkbox"/>
5.4	Radiated Interference Immunity Test ↳ Ports ² enclosure, supply, comm, I/O, functional earth	IEC 60255-26	IEC 61000-4-3			<input type="checkbox"/>	<input type="checkbox"/>
5.5	Electrical Fast Transient/Burst Immunity Test ↳ Zone ↳ Ports ² enclosure, supply, comm, I/O, functional earth	IEC 60255-26	IEC 61000-4-4			<input type="checkbox"/>	<input type="checkbox"/>

Note:

Please cross whichever applicable and fill in the required blanks.
(e.g: Class II , Temp. 55°C , Humid. 95%)

² Please ~~strike through~~ the port(s) which not applicable during testing.
(e.g: ~~enclosure, supply, comm, I/O, functional earth~~)

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NO.	TEST DESCRIPTION	STANDARD	TEST STANDARD	TEST REPORT NO.	PAGE	YES	NO
5	Electromagnetic Compatibility (EMC) Tests (Cont.)						
5.6	Slow Damped Oscillatory Wave Immunity Test ↳ Ports ² enclosure, supply, comm, I/O, functional earth	IEC 60255-26	IEC 61000-4-18			<input type="checkbox"/>	<input type="checkbox"/>
5.7	Surge Immunity Test ↳ Zone ↳ Ports ² enclosure, supply, comm, I/O, functional earth	IEC 60255-26	IEC 61000-4-5			<input type="checkbox"/>	<input type="checkbox"/>
5.8	Conducted Interference Immunity Test ↳ Ports ² enclosure, supply, comm, I/O, functional earth	IEC 60255-26	IEC 61000-4-6			<input type="checkbox"/>	<input type="checkbox"/>
5.9	Power Frequency Immunity on DC Binary Inputs ↳ Ports ² enclosure, supply, comm, I/O, functional earth	IEC 60255-26	IEC 61000-4-16			<input type="checkbox"/>	<input type="checkbox"/>
5.10	Power Frequency Magnetic Field Immunity Test ↳ Ports ² enclosure, supply, comm, I/O, functional earth	IEC 60255-26	IEC 61000-4-8			<input type="checkbox"/>	<input type="checkbox"/>
5.11	AC Voltage Dips & Voltage Interruption Test ↳ Ports ² enclosure, supply, comm, I/O, functional earth	IEC 60255-26	IEC 61000-4-11			<input type="checkbox"/>	<input type="checkbox"/>

Note:

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² Please ~~strike through~~ the port(s) which not applicable during testing.
(e.g. ~~enclosure, supply, comm, I/O, functional earth~~)

TECHNICAL INFORMATION

EARTH LEAKAGE RELAY

NO.	TEST DESCRIPTION	STANDARD	TEST STANDARD	TEST REPORT NO.	PAGE	YES	NO
5	Electromagnetic Compatibility (EMC) Tests (Cont.)						
5.12	DC Voltage Dips & Voltage Interruption Test ↳ Ports ² enclosure, supply, comm, I/O, functional earth	IEC 60255-26	IEC 61000-4-29			<input type="checkbox"/>	<input type="checkbox"/>
5.13	Voltage Ripple on DC Power Supply Voltage Test ↳ Ports ² enclosure, supply, comm, I/O, functional earth	IEC 60255-26	IEC 61000-4-17			<input type="checkbox"/>	<input type="checkbox"/>
5.14	Gradual Shut Down / Start-up Test ↳ Ports ² enclosure, supply, comm, I/O, functional earth	IEC 60255-26	IEC 60255-26			<input type="checkbox"/>	<input type="checkbox"/>

Note:

Please cross whichever applicable and fill in the required blanks.

²Please ~~strikethrough~~ the port(s) which not applicable during testing.

(e.g: ~~enclosure, supply, comm, I/O, functional earth~~)

TECHNICAL INFORMATION

EARTH LEAKAGE RELAY

F. LIST OF DOCUMENTS TO BE ATTACHED

<u>NO.</u>	<u>DESCRIPTION</u>	<u>YES</u>	<u>NO</u>
1.	Technical Catalogue	<input type="checkbox"/>	<input type="checkbox"/>
2.	Manufacturer's Installation Manual	<input type="checkbox"/>	<input type="checkbox"/>
3.	Operation and Maintenance Manual	<input type="checkbox"/>	<input type="checkbox"/>
4.	Test Report(s)	<input type="checkbox"/>	<input type="checkbox"/>
5.	Certificate of ISO/IEC 17025 Laboratory Accreditation	<input type="checkbox"/>	<input type="checkbox"/>
6.	Certificate of All Related IEC 60255 Scope Accreditation	<input type="checkbox"/>	<input type="checkbox"/>

G. PENGESAHAN

Adalah saya, dengan ini
 mengesahkan segala keterangan yang diberikan/dikemukakan bagi bahan/barangan di atas adalah benar. Jika saya didapati
 membuat pengakuan **PALSU**, maka tindakan boleh diambil oleh pihak JKR terhadap permohonan pendaftaran saya.

Setem Syarikat:

Tandatangan : _____
 Nama : _____
 Jawatan : _____
 Tarikh : _____

H. ULASAN (Untuk Kegunaan Pejabat)

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Note:

Please cross whichever applicable and fill in the required blanks.