

Pre-Qualification requirements (including Additional Terms and Conditions for Bidders)
PQR for PLUG IN RELAY (PI 120961027)

S No.	BHEL's requirement	Bidder's acceptance
1	Technical requirement: PLUG IN RELAY (24/220/110/30VDC) AS PER SG SG12647 REV 06 & SG12920 REV 07	Accepted as per NIT and there is no technical deviation
2	Bidder to confirm whether OEM or trader If OEM-Please submit self certificate. If Trader/Reseller-Please submit valid OEM authorisation certificate.	OEM Certificate/ OEM authorised certificate
3	Checklist to be filled by vendor as per SG 12647 and SG 12920 Pg.2 &3	

Bidders authorized seal and sign for
acceptance of above requirements



PRODUCT STANDARD

SWITCHGEAR ENGINEERING DIVISION

SG 12647 REV-06

PAGE 1 OF 3

PLUG-IN TYPE AUXILIARY RELAY (24V DC) COMPLETE WITH BASE

1 SCOPE & APPLICATION

This product standard covers the requirement of **24V DC** Interposing/coupling relay **K11 & K12** used for application of closing and tripping application of switchgears. These sensitive relays operate on 24V DC command from DDCMIS.

2 APPLICABLE STANDARD

Plug-in-relay - IS 3231

3 TECHNICAL PARAMETERS

SI No	Parameter		Rating
3.1	Coil rating	DC	24V DC
3.2	Contact Arrangement (Min. nos of Contacts)		4 C/O 2NO+2NC
3.3	Coil Burden		=<2.5 watts (max. 2.5 watts)
3.4	Contact rating	Make and carry continuous AC/DC	1250 VA/Watt with maximum of 660 V and 5 Amp
		Breaking Capacity (AC)	1250 VA with maximum of 660V and 5A.
		Breaking Capacity (DC Resistive)	100 Watts with a maximum of 220 V and 5 A
		Breaking Capacity (DC inductive)	50 Watts with a maximum of 220 V and 5 A and maximum time constant 45m sec.
3.5	No. of Operations	Mechanical Test	20 million operations
		Electrical	1 million operations
3.6	Insulation test		2 kV AC 50Hz for 1 min
3.7	Case		Relay shall be fitted with transparent cover with front or rear connection plug in base.
3.8	Mounting		Suitable for 35 mm DIN rail mounting or base mounted.
3.9	Operation indicator		Required
3.10	Special sockets/lugs		If required for wire termination on the relay shall be supplied in adequate qty along with the relay

COPYRIGHT AND CONFIDENTIAL

The information on this document is the property of Bharat Heavy Electricals Limited
It must not be used directly or indirectly in any way detrimental to interest of Co.

REV.

06

PRINTS TO :-
Issued Online

APPROVED :-

NNS

ALTD.

RR

Revised to
delete ABB

PREPARED

ISSUED

DATE

APPD.

MAK

MLK

APS

31.01.07

DATE

07.06.16



PRODUCT STANDARD

SWITCHGEAR ENGINEERING DIVISION

SG 12647 REV-06

PAGE 2 OF 3

COPYRIGHT AND CONFIDENTIAL

The information on this document is the property of Bharat Heavy Electricals Limited
It must not be used directly or indirectly in any way detrimental to interest of Co.

4	Acceptance Criteria
4.1	Type and No. of auxiliary contacts & auxiliary supply to be matched with order specification.
4.2	Visual check for defect free plug-in-relay.

5	Equivalent Chart								
	<table><tr><th>MAKE</th><th>TYPE</th></tr><tr><td>5.1 Jyoti make</td><td>RE302</td></tr><tr><td>5.2 Areva make</td><td>VAA11</td></tr><tr><td>5.3 Guardian make</td><td>11-Series (sensitive version)</td></tr></table>	MAKE	TYPE	5.1 Jyoti make	RE302	5.2 Areva make	VAA11	5.3 Guardian make	11-Series (sensitive version)
MAKE	TYPE								
5.1 Jyoti make	RE302								
5.2 Areva make	VAA11								
5.3 Guardian make	11-Series (sensitive version)								

Checklist to be filled by vendor.

SI No	Parameter		Rating	Compliance of Vendor (YES/NO)
6.1	Coil rating	DC	24V	
		AC(50HZ)	110V, 240V.	
6.2	Contact Arrangement (Min. nos of Contacts)		4 C/O or	
			2NO+2NC.	
6.3	Coil Burden		=<2.5 watts (max. 2.5 watts)	
6.4	Contact rating	Make and carry continuous AC/DC	1250 VA/Watt with maximum of 660 V and 5 Amp	
		Breaking Capacity (AC)	1250 VA with maximum of 660V and 5A.	
		Breaking Capacity (DC Resistive)	100 Watts with a maximum of 220 V and 5 A	
		Breaking Capacity (DC inductive)	50 Watts with a maximum of 220 V and 5 A and maximum time constant 45m sec.	
6.5	No. of Operations	Mechanical Test	20 million operations	
		Electrical	1 million operations	
6.6	Insulation test		2 kV AC 50Hz for 1 min	



PRODUCT STANDARD

SWITCHGEAR ENGINEERING DIVISION

SG 12647 REV-06

PAGE 3 OF 3

COPYRIGHT AND CONFIDENTIAL

The information on this document is the property of Bharat Heavy Electricals Limited
It must not be used directly or indirectly in any way detrimental to interest of Co.

6.7	Case	Relay shall be fitted with transparent cover with front or rear connection plug in base.	
6.8	Mounting	Suitable for 35 mm DIN rail mounting or base mounted.	
6.9	Operation indicator	Required	
6.10	Special sockets/lugs	If required for wire termination on the relay shall be supplied in adequate qty along with the relay	

Please note that above check list shall be filled and enclosed with the offer. Any offer without duly filled checklist will not be entertained and will be reject technically without any further communication.

BP Numbers for various voltage range:

S/No.	Voltage	BP Number	Make
1	24V DC	BP9049113397	M/s Jyoti
2	24V DC	BP9049123660	M/s Guardian
3	24V DC	BP9049123546	M/s Areva

Note: In case of order, vendor to submit one sample (of relays to be supplied) with order acceptance for physical verification by BHEL, before supply of bulk quantity.



PRODUCT STANDARD

SWITCHGEAR ENGINEERING DIVISION

SG 12920 REV-07

PAGE 1 OF 3

PLUG-IN TYPE AUXILIARY RELAY COMPLETE WITH BASE

1 SCOPE & APPLICATION This product standard covers the requirement of AC/DC plug in auxiliary relays used for various application in switchgears and control panels.

2 APPLICABLE STANDARD Plug-in-relay - IS 3231

3 TECHNICAL PARAMETERS

Sl No	Parameter		Rating
3.1	Coil rating	DC	30V, 48V, 50V, 110V, 220V, and 250V. (Relay shall be suitable for continuous operation for 80% to 110% of rated voltage)
3.2	Contact Arrangement (Min. nos of Contacts)		4 C/O
3.3	Coil Burden		=<4 watts (max. 4 watts)
3.4	Contact rating	Make and carry continuous AC/DC	1250 VA/Watt with maximum of 660 V and 5 Amp
		Breaking Capacity (AC)	1250 VA with maximum of 660V and 5A.
		Breaking Capacity (DC Resistive)	100 Watts with a maximum of 220 V and 5 A
		Breaking Capacity (DC inductive)	50 Watts with a maximum of 220 V and 5 A and maximum time constant 45m sec.
3.5	No. of Operations	Mechanical Test	20 million operations
		Electrical	1 million operations
3.6	Insulation test		2 kV AC 50Hz for 1 min
3.7	Case		Relay shall be fitted with transparent cover with front or rear connection plug in base.
3.8	Mounting		Suitable for 35 mm DIN rail mounting or base mounted.
3.9	Operation indicator		Required, LED indication
3.10	Special sockets/lugs		If required for wire termination on the relay shall be supplied in adequate qty along with the relay
3.11	Protection against reverse polarity		Plug-in relay should have protection against mal-function/failure on reverse polarity i.e. protection of relays against reverse polarity of voltage.

REV.	07	PRINTS TO :- Issued Online		APPROVED :-- NNS		
ALTD.	RR	Revised to update contact configuration of relay & operation indicator		PREPARED	ISSUED	DATE
APPD.	MHN			HRP	APS	10.05.00
DATE	08.04.22					

COPYRIGHT AND CONFIDENTIAL

The information on this document is the property of Bharat Heavy Electricals Limited
It must not be used directly or indirectly in any way detrimental to interest of Co.



PRODUCT STANDARD

SWITCHGEAR ENGINEERING DIVISION

SG 12920 REV-07

PAGE 2 OF 3

4	Acceptance Criteria
4.1	Type and No. of auxiliary contacts & auxiliary supply to be matched with order specification.
4.2	Visual check for defect free plug-in-relay.

5	Equivalent Chart
	MAKE TYPE
5.1	Jyoti make RE300
5.2	Guardian make 11-Series (sensitive version)

Checklist to be filled by vendor.

<u>Sl No</u>	<u>Parameter</u>		<u>Rating</u>	<u>Compliance of Vendor (YES/NO)</u>
6.1	Coil rating	DC	30V, 48V, 50V, 110V, 220V, and 250V. (Relay shall be suitable for continuous operation for 80% to 110% of rated voltage)	
		AC (50HZ)	110V, 240V.	
6.2	Contact Arrangement (Min. nos of Contacts)		4 C/O	
6.3	Coil Burden		=<4 watts (max. 4 watts)	
6.4	Contact rating	Make and carry continuous AC/DC	1250 VA/Watt with maximum of 660 V and 5 Amp	
		Breaking Capacity (AC)	1250 VA with maximum of 660V and 5A.	
		Breaking Capacity (DC Resistive)	100 Watts with a maximum of 220 V and 5 A	
		Breaking Capacity (DC inductive)	50 Watts with a maximum of 220 V and 5 A and maximum time constant 45m sec.	
6.5	No. of Operations	Mechanical Test	20 million operations	
		Electrical	1 million operations	
6.6	Insulation test		2 kV AC 50Hz for 1 min	
6.7	Case		Relay shall be fitted with transparent cover with front or rear connection plug in base.	

COPYRIGHT AND CONFIDENTIAL

The information on this document is the property of Bharat Heavy Electricals Limited
It must not be used directly or indirectly in any way detrimental to interest of Co.



PRODUCT STANDARD

SWITCHGEAR ENGINEERING DIVISION

SG 12920 REV-07

PAGE 3 OF 3

6.8	Mounting	Suitable for 35 mm DIN rail mounting or base mounted.	
6.9	Operation indicator	Required	
6.10	Special sockets/lugs	If required for wire termination on the relay shall be supplied in adequate qty along with the relay	
6.11	Protection against reverse polarity	Plug-in relay should have protection against mal-function/failure on reverse polarity i.e. protection of relays against reverse polarity of voltage.	

Please note that above check list shall be filled and enclosed with the offer. Any offer without duly filled checklist will not be entertained and will be reject technically without any further communication.

BP Numbers for various voltage range:

S/N	Voltage	BP Number M/s Jyoti make	BP Number M/s Guardian make	BP Number M/s Areva make
1	220V DC	BP9049251269	BP9049123643	BP9049123520
2	110V DC	BP9049251247	BP9049123651	BP9049123538
3	48V DC	BP9049123503	BP9049123686	BP9049123562
4	30V DC	BP9049123490	BP9049123678	BP9049123554
5	110V AC	BP9049122639	BP9049123694	BP9049123570

Note: In case of order, vendor to submit one sample (of relays to be supplied) with order acceptance for physical verification by BHEL, before supply of bulk quantity.

COPYRIGHT AND CONFIDENTIAL

The information on this document is the property of Bharat Heavy Electricals Limited
It must not be used directly or indirectly in any way detrimental to interest of Co.