



Type Approval - Electrical

Approval Number EL 00020

Manufacturer Alstom Grid

Manufacturing Plant Stafford, United Kingdom

Product Description

1. P14N non-directional overcurrent and earth fault protection relay
 - Part number P14NB11C4C0**0A for DNP3
 - Part number P14NB11C2C0**0A for MODBUS
2. P14D directional overcurrent and earth fault relay
 - Part number P14DB11C4C0**0A for DNP3
 - Part number P14DB11C2C0**0A for MODBUS

** is the two digit code for the software version which is required to be confirmed with Sydney Trains Protection Engineer prior to ordering. Relays are to be DNP3 configured unless they are a maintenance replacement for an existing MODBUS configured installation.

Approved for Applications in accordance with EP 19 00 00 02 SP, specifically 1500V rectifier protection and HV feeder protection.

Conditions This type approval is valid for relays manufactured in Stafford, United Kingdom. The initial locations for installation in the RailCorp network are to be agreed by ASA Lead Electrical Engineer and final type approval is subject to satisfactory 6 month period of service.

The relays are to be installed in accordance with the attached test block and relay input/output configurations.

Approved:

Date:

Neal Hook

Lead Electrical Engineer

RECTIFIER OC & EF PROTECTON

P14N RELAY

Relay	MMLG01			Incoming Supplies
RELAY 1 contact	2	x	1	Trip +ve
RELAY 1 contact	4	x	3	Overcurrent & Earth Fault Trip
RELAY 3 contact	6	x	5	Trip +ve
RELAY 3 contact	8	x	7	Earth Fault Trip
	10	x	9	Spare
	12	x	11	Spare
TERMINAL 13	14		13	+ 125V dc Aux Supply
TERMINAL 14	16	x	15	- 125V dc Aux Supply
RELAY 8 contact	18	x	17	Trip +ve
RELAY 8 contact	20	x	19	Breaker Fail Trip
la	22	x	21	la
lb	24	x	23	lb
lc	26	x	25	lc
lo	28	x	27	lo

OUTPUT RELAYS:

RELAY 1	OVERCURRENT & EARTH FAULT TRIP
RELAY 2	TCS ALARM
RELAY 3	EARTH FAULT TRIP (to MTM where applicable)
RELAY 4	OVERCURRENT ALARM
RELAY 5	EARTH FAULT ALARM
RELAY 6	BREAKER FAIL ALARM
RELAY 7	SPARE
RELAY 8	BREAKER FAIL TRIP
RELAY 9	SPARE
RELAY 10	SPARE
RELAY 11	SPARE
RELAY 12	SPARE

INPUT RELAYS:

INPUT L1	SPARE
INPUT L2	SPARE
INPUT L3	SPARE
INPUT L4	SPARE
INPUT L5	SPARE
INPUT L6	SPARE
INPUT L7	SPARE
INPUT L8	SPARE
INPUT L9	TCS
INPUT L10	SPARE
INPUT L11	SPARE

Note: All relay alarms except the Watchdog alarm are normally conveyed to the RTU via the serial link.

FEEDER DOC & DEF PROTECTON

P14D RELAY

Relay	MMLG01			Incoming Supplies
RELAY 1 contact	2	x	1	Trip +ve
RELAY 1 contact	4	x	3	Overcurrent & Earth Fault Trip
Va	6	x	5	Va
Vb	8	x	7	Vb
Vc	10	x	9	Vc
Vn	12	x	11	Vn
TERMINAL 13	14		13	+ 125V dc Aux Supply
TERMINAL 14	16	x	15	- 125V dc Aux Supply
RELAY 8 contact	18	x	17	Trip +ve
RELAY 8 contact	20	x	19	Breaker Fail Trip
la	22	x	21	la
lb	24	x	23	lb
lc	26	x	25	lc
lo	28	x	27	lo

OUTPUT RELAYS:

RELAY 1	OVERCURRENT & EARTH FAULT TRIP
RELAY 2	TCS ALARM
RELAY 3	SPARE
RELAY 4	OVERCURRENT ALARM
RELAY 5	EARTH FAULT ALARM
RELAY 6	BREAKER FAIL ALARM
RELAY 7	INTERTRIP SEND (IF REQUIRED)
RELAY 8	BREAKER FAIL TRIP
RELAY 9	SPARE
RELAY 10	SPARE
RELAY 11	SPARE
RELAY 12	SPARE

INPUT RELAYS:

INPUT L1	SPARE
INPUT L2	SPARE
INPUT L3	SPARE
INPUT L4	SPARE
INPUT L5	SPARE
INPUT L6	SPARE
INPUT L7	SPARE
INPUT L8	SPARE
INPUT L9	TCS
INPUT L10	SPARE
INPUT L11	SPARE

Note: All relay alarms except the Watchdog alarm are normally conveyed to the RTU via the serial link.