

HARTEK[®]



HARTEK Control Relay Panel upto 220 KV

Technical Manual

2014-15

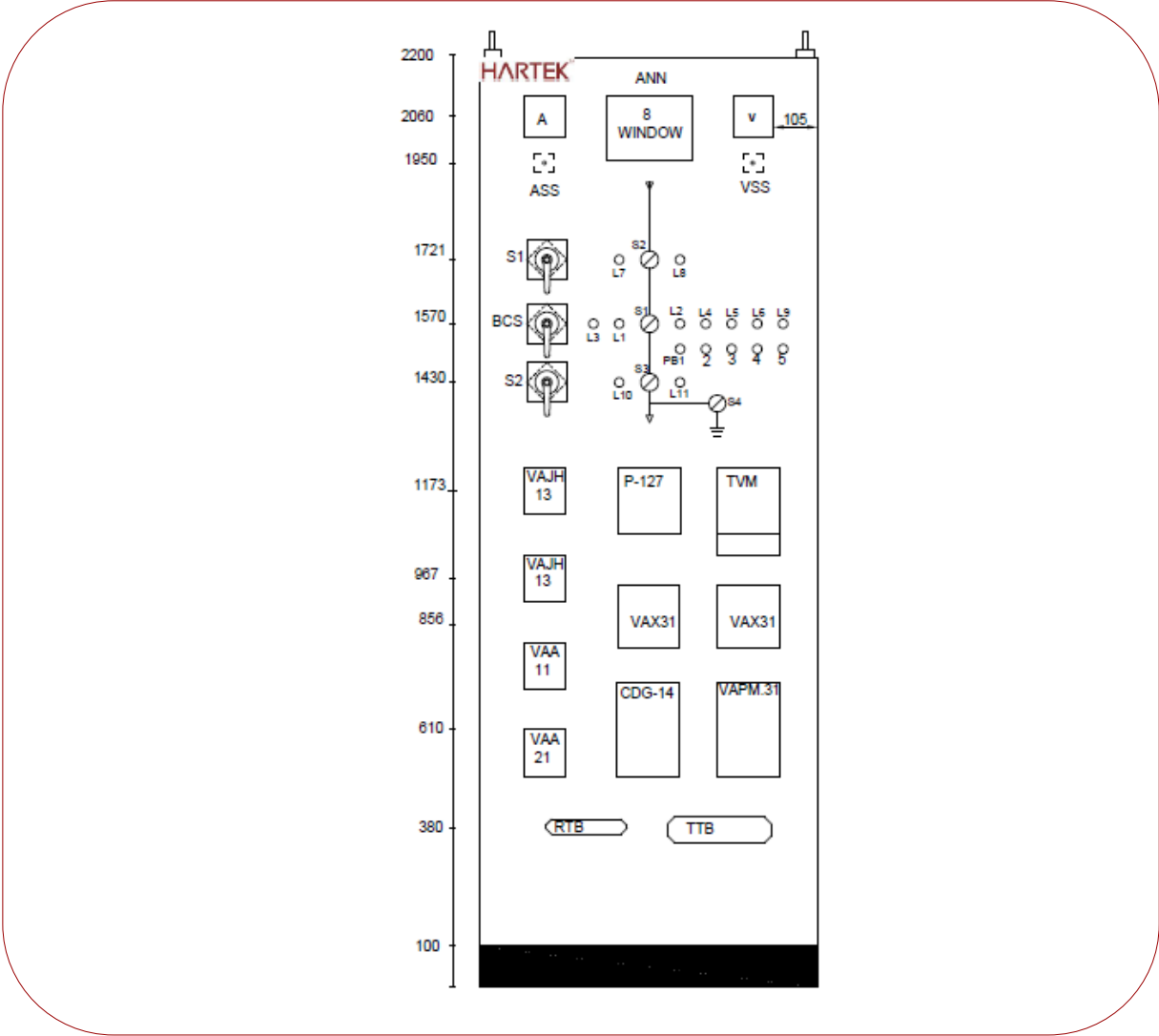
Contents

1. Why HARTEK Control & Relay Panels?
2. Design Parameters
3. Types of Relays & their functions
4. List of Routine Tests
5. Types of Panels
6. Customer Benefits
7. Applications

Why HARTEK Control Relay Panels

- ❖ Over 24 years of experience in the power distribution sector
- ❖ In house design and infrastructure
- ❖ Quality Products, complying to all international standards
- ❖ The company is well equipped with necessary tools and tackles,calibrated test and measuring instruments, three phase and singlephase test kits for the manufacture and testing of panels
- ❖ The company has supplied and successfullycommissioned its 11kV, 33kV, 66kV, 132kV and 220kV control andrelay panels
- ❖ The products engineered, manufactured and supplied by thecompany are well appreciated and accepted by experts in the field ofpower system
- ❖ The company can Design, Manufacture and Supply custom made Control Relay Panels as per Clients requirement

PANEL DESIGN



Depth and Height of Panel		
Width	mm	800
Depth	mm	800
Height	mm	UPTO 2315

RELAYS AND THERE FUNCTIONS

Sr No	RELAYS	USES	MAKE
1	TRANSFORMER DIFFERENTIAL RELAY (Micom-P642)	DIFFERENTIAL PROTECTION	SCHNEIDER
2	REF RELAYS (Micom-P122)	RESTRICTED EARTH FAULT PROTECTION	SCHNEIDER
3	SEF RELAYS (Micom-P120)	SENSITIVE EARTH FAULT PROTECTION	SCHNEIDER
4	OVER CURRENT & EARTH FAULT RELAY (Micom-P111)	O/C & E/F PROTECTION	SCHNEIDER
5	DISTANCE PROTECTION RELAY (Micom-P441)	DISTANCE PROTECTION	SCHNEIDER
6	DIRECTIONAL O/C & E/F,O/V & U/V RELAY(Micom-P127)	DIR & NON DIR O/C &E/F , O/V & U/V PROTECTION	SCHNEIDER
7	TRANSFORMER AUXILIARY RELAY	BUCHLOZE, OLTC, OTI ALARM / TRIPT/F AUX. RELAY	SCHNEIDER/ALSTOM
8	MASTER TRIP RELAYS	TRIPPING	SCHNEIDER/ALSTOM
9	TRIP CIRCUIT SUPERVISION RELAYS	TRIP CIRCUIT SUPERVISION	SCHNEIDER/ALSTOM
10	FUSE FAILURE RELAYS	FUSE FAILURE PROTECTION	SCHNEIDER/ALSTOM
11	DC SUPERVISION RELAYS	DC FAIL SUPERVISION	SCHNEIDER/ALSTOM
12	AC SUPERVISION RELAYS	AC FAIL SUPERVISION	SCHNEIDER/ALSTOM
13	VOLTAGE CONTROL RELAYS	VOLTAGE CONTROL	SCHNEIDER/ALSTOM
14	REF RELAYS (CAG 14)	RESTRICTED EARTH FAULT PROTECTION	SCHNEIDER
15	VOLTAGE CONTROL RELAYS	VOLTAGE CONTROL	SCHNEIDER/ALSTOM

With Significant collaborations, technical know-how support and agreements with select industry giants, including Schneider Electric for Numerical & Electromechanical Relays, thusmaking HARTEK Control Relay Panels, the most preferred choice of all customers

LIST OF ROUTINE TEST

S. NO	Description of checks
A	Mechanical Checks
1	Dimensions of the panel/- Base Frame
2	Paint Colour Shade Interior / exterior
3	Position of equipment as per General Arrangement (GA) drawings
4	Mimic colour & symbols
5	Main Panel Name plate Details Equipment Name plates / TB Label & TB Numbers Check
6	Earth Flat size / provision for extension
7	Internal / external equipment accessibility
B	Electrical Checks
1	Equipment Check as per Bill Of Material (BOM:)
2	Verification of Internal panel Wiring
3	Check on tightness of all terminals by hand
4	DC wiring / Control 'wiring/ CT, PT wiring check
5	Operational Checks of Protection Relays / Meters by Secondary Injection in Default Settings
6	Operation of Trip/ Auxiliary Relays
7	Scheme checks includes :- a. Trip Contacts b. Test Block Contacts c. Alarm Contacts / Annunciations / Audible Alarm d. DAS / SCADA Contacts e. Interlock on Closing Circuits f. Control Switch Operations & Contacts g. Indicating Lamps
8	All equipment body earthing through earth bus
9	Panel illumination & Heater Circuit Check
10	Insulation Resistance with 500V / 1000 V Megger Between Control, CT, PT circuits & Earth (value in M ohm)
11	High Voltage Test Voltage applied :2kv for 1 min Between Control circuits & Earth

Types of Panels



Transformer & Feeder Panel



Bus bar Protection Panel



Generator Protection Panel



Capacitor bank panel

CUSTOMER BENEFITS

- ❖ Compact, versatile and highly reliable design
- ❖ Wide range of application
- ❖ Highest quality of Relays
- ❖ Tested as per International Standards
- ❖ Complete After Sales support

APPLICATIONS



Substations



Industry



Power Plants

HARTEK®

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