

# HARTEK<sup>®</sup>



HARTEK 11 KV Medium Voltage Switchgear

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## Technical Manual

2014-15

Alliance Partner  
of  
**Schneider**  
Electric  
for MV Components Integration

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### Why HARTEK Switchgears?

- ❖ Over 24 years of experience in the power distribution sector
- ❖ In house design and infrastructure
- ❖ Quality Products, complying to all international standards
- ❖ With Significant collaborations, technical know-how support and agreements with select industry giants, thus making the most preferred choice of all customers
- ❖ Complete After Sales Support

### Salient Features

- ❖ Fully tested as per IEC 62271- 100 -200 standards
- ❖ Successfully tested against internal arc faults
- ❖ Robust Construction&Virtually Maintenance free
- ❖ Tailor made for individual requirement
- ❖ Constructed with pre-galvanized sheets without any welding points
- ❖ Smallest width in the market, yet with sufficient air clearance in bus bar.

With all these salient features and unique points, thus making the most reliable switchgear in the power industry.

## TECHNICAL PARAMETERS

Rated Voltage	kV	12
Rated power frequency withstand voltage	kV	28
Rated lightning impulse withstand voltage	kV peak	75
Rated frequency	Hz	50/60
Rated short time withstand current*	kA-3 sec	25 / 31.5 / 40
Rated peak withstand current	kA peak	65 / 82 / 100
Rated continuous current		
Busbar	Upto A	2500
Cubicle		
Earthing switch making capacity	kA peak	82
Internal arc classification according to IEC 62271-200 AFLR	kA	Upto 40
Degree of Protection		IP4X**

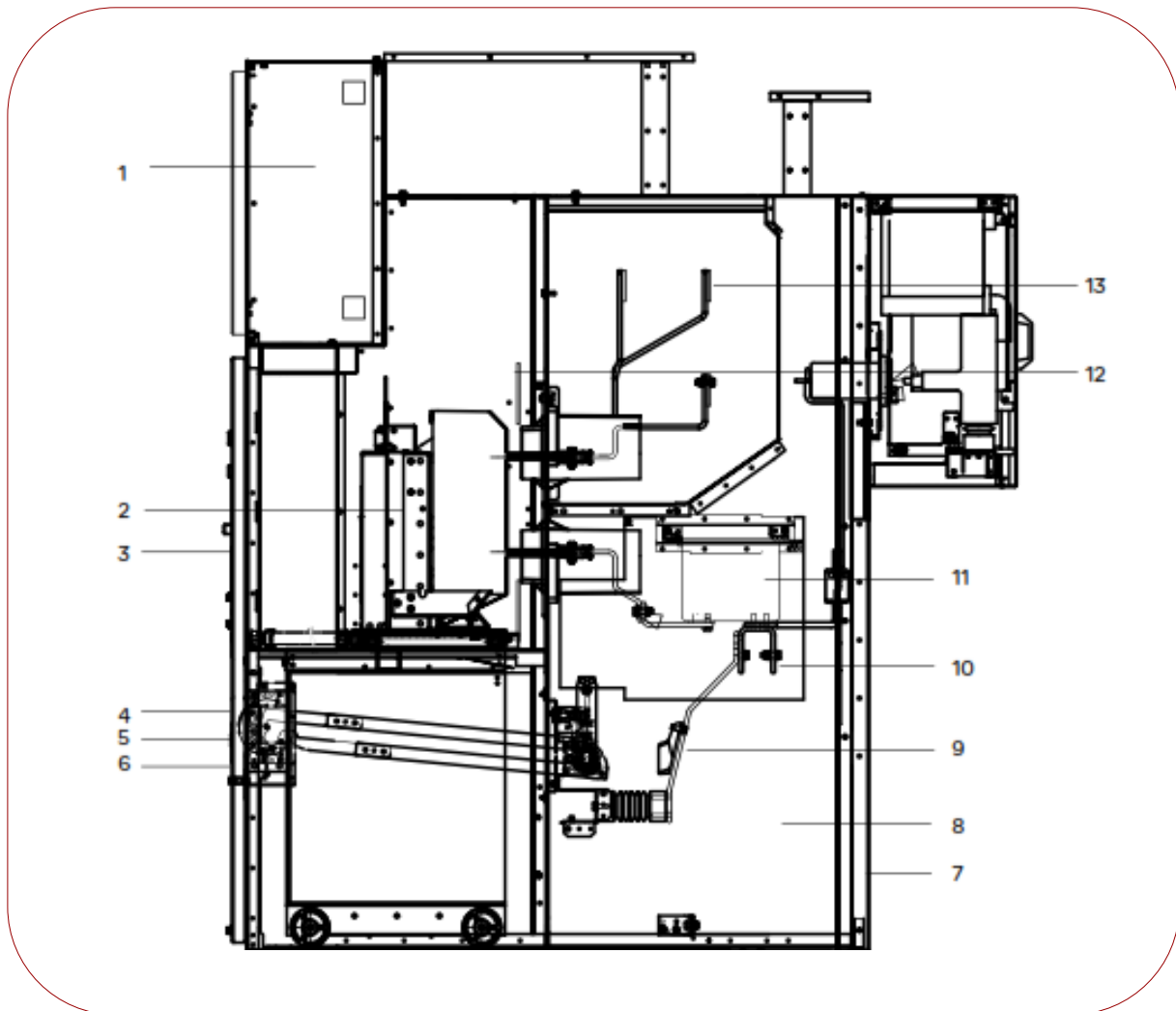
\* The short-circuit capability of the current transformers must be considered separately

\*\* Other values available on request.

## DIMENSIONS AND WEIGHTS

Depth and Height of Panel		
Width	mm	540 for rated current ≤ 1250 A 600 for rated current ≤ 1250 A
Depth	mm	1650 ( Foundation depth with / without voltage transformer) (With voltage transformer, panel depth increases at the top, while the foundation depth remains unchanged)
Height	mm	2300 (low voltage cabinet 735 mm)

PANEL DESIGN



- 1 Low-voltage cabinet with control device
- 2 Circuit-breaker truck HVX
- 3 Front door
- 4 Earthing switch position indicator
- 5 Insertion opening for operating lever of the earthing switch
- 6 Mechanical interrogation interlock of insertion port for the earthing switch
- 7 Cable compartment cover
- 8 Cable compartment
- 9 Make-proof earthing switch
- 10 Cable connections
- 11 Current transformers
- 12 Shutter
- 13 Busbars

STANDARDS AND REGULATIONS

APPLIED STANDARDS

Switchgear units are

- ❖ metal-enclosed; loss of service continuity category acc. to IEC 62271-200: LSC 2B-PM
- ❖ type-tested
- ❖ tested for internal faults (qualification IAC AFLR)
- ❖ dimensioned for indoor installation

\* other values available on request

Compact switchgear units meet the following standards and regulations:

Ambient conditions in accordance with IEC 62271-1	
Switchgear	IEC 62271-200, IEC 62271-1
Internal arc classification (IAC)	IEC 62271-200
Circuit-breaker	IEC 62271-100
Earthing switch	IEC 62271-102
Isolating truck	IEC 62271-102
Current transformers	IEC 60441-1
Voltage transformers	IEC 60442-2
Voltage Detecting Systems	IEC 61243-5, IEC 61958
Protection against accidental contact, foreign bodies and water	IEC 60529

**PANEL SAFETY INTERLOCKS**

A list of basic interlocks to enhance operator safety are described below :		
Interlock	Function of interlock	Method of operation of interlock
Between truck and lowvoltage connector	The truck cannot be actuated unless the low-voltage connector is inserted	The rotary movement of the truck crank is blocked after one rotation. Do not apply force
Between truck and earthing switch	The truck cannot be racked in if the earthing switch is ON.	The opening in the front door for the truck crank is locked
	The earthing switch can no longer be switched on if the truck has left its disconnected position.	The interrogation slide below the earthing switch is locked. The insertion of the earthing switch lever is blocked
Between the circuitbreaker and the truck	Circuit-breaker cannot be racked in or out while it is switched on	The rotary movement of the truck crank is blocked after one rotation. Do not apply force
	Circuit-breaker cannot be switched on/off unless the truck is completely in its disconnected or service position	The circuit-breaker cannot be switched on or off.
Between truck and cubicle	If the truck front frame is not locked in the cubicle, the truck cannot be actuated	The crank cannot be inserted to the truck if both truck handles in the front frame are not moved outwards. Rotation of the crank not possible if both truck handles in the front frame are not moved outwards
	If the truck has left its disconnected position the truck front frame cannot be unlocked in the cubicle	Both truck handles in the front frame are locked
Between the truck and the front door (optional)	The front door can only be opened if the truck is in its disconnected position.	The double-bit key cannot be turned. Provision available in the front door to open the interlock
	If the front door is opened, the truck cannot be moved into service position. This interlock is standard	The crank cannot be inserted to the truck if the front door is opened.
	If the front door is not interlocked by the double-bit key, the truck cannot be actuated	The opening in the front door for the truck crank is locked
For the truck disconnected position (optional castle lock)	CB can be moved to service position only when key is inserted in the lock Key is blocked in the lock when CB is in service position	LV plug insertion is blocked by the lock and is possible only when key is inserted Key cannot be taken out unless LV plug is disconnected. LV plug cannot be disconnected when CB is in service position

## CUSTOMER BENEFITS

- ❖ Compact, versatile and highly reliable design
- ❖ Wide range of application
- ❖ Tested as per latest IEC Standard
- ❖ 100 full load short circuit operations
- ❖ As majority application is in utilities, industry & commercial buildings where safety is a top priority, Seeing this the panel is designed with the highest safety norms with positive interlocks with enhanced operator safety.

## APPLICATIONS



**Utilities**



**Industry**



**Buildings**



HARTEK®

Hartek India Pvt Limited  
Works- F322, Phase 8-B Industrial Area  
Mohali- 160077, Punjab. India.  
Corporate Headquarters- Sco 13,14,15,Sector 34-A  
Chandigarh.

[www.hartek.in](http://www.hartek.in)