



## DATA SHEET

<b>Document Title:</b>	Transformer Rectifier –REG&SCR&REF -1PH-75V 25A	<b>Rev:01</b>
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# Transformer Rectifier 75 V 25A SCR & REG & REFERENCE POTENTIAL

<b>00</b>	<b>03/07/2024</b>	<b>ISSUE FOR APPROVAL</b>	<b>S.Solgi</b>	<b>Z.Asadi</b>	<b>H.Taherkhani</b>
<b>REV.</b>	<b>DATE</b>	<b>DESCRIPTION</b>	<b>PREPARED</b>	<b>CHECKED</b>	<b>APPROVED</b>



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GENERAL DESIGN DATA				
<b>1. SITE CONDITION</b>				
1.1 Site elevation .....2000... Meters above sea level				
1.2 Max. ambient temperature +50 degree centigrade , Sun Metal temp. Max +85 degree centigrade				
1.3 Min. ambient temperature -10 degree centigrade				
1.4 Relative humidity -95-- percent				
1.5 Earth quake -0.3-- g (m/s <sup>2</sup> ) UBC Zone 4				
1.6 Lighting Storm isoceraunic level -60-- storm days /year				
1.7 Service location	indoor <input type="checkbox"/>	outdoor <input checked="" type="checkbox"/>		
1.8 Unusual conditions	Windy <input checked="" type="checkbox"/>	Snowy <input checked="" type="checkbox"/>	Dusty <input checked="" type="checkbox"/>	
1.9 Atmosphere	Sal ferrous <input checked="" type="checkbox"/>	Dusty <input checked="" type="checkbox"/>	Chemical Vapors <input checked="" type="checkbox"/>	
<b>2. DEGREE OF INGRESS PROTECTION</b>				
2.1 <input type="checkbox"/> Explosion proof				
2.1.1 Area classification	<input type="checkbox"/> Zone 0	<input type="checkbox"/> Zone 1	<input type="checkbox"/> Zone 2	<input checked="" type="checkbox"/> Safe area
2.1.2 Explosion Protection	<input type="checkbox"/> Exd	<input type="checkbox"/> Exe	<input type="checkbox"/> Exn	
2.1.3 Group of Gas in site	<input type="checkbox"/> II A	<input type="checkbox"/> II B	<input type="checkbox"/> II C	
2.1.4 Temperature class	<input type="checkbox"/> T3	<input type="checkbox"/> T4	<input type="checkbox"/> T5	
2.2 <input checked="" type="checkbox"/> Weather proof				
2.3 <input checked="" type="checkbox"/> Corrosion resistance				
2.4 <input checked="" type="checkbox"/> General Propose				
2.5 IP 55				
<b>3.COOLING SYSTEM</b>				
3.1 Type of transformer	<input checked="" type="checkbox"/> Oil Immersed		<input type="checkbox"/> Dry type	
3.2 Type of cooling	<input checked="" type="checkbox"/> ONAN	<input type="checkbox"/> AN	<input type="checkbox"/> AF	<input type="checkbox"/> ONAF
<b>4.MOUNTING</b>				
4.1 <input checked="" type="checkbox"/> Pad mounted (Plinth Mounted)	4.2 <input type="checkbox"/> Pole mounted	4.3 <input type="checkbox"/> Wall mounted	4.4 <input type="checkbox"/> free standing	
4.2 Neutral Earthing	<input type="checkbox"/> Resistor	<input checked="" type="checkbox"/> Solidly		
<b>5.COLOR FINISHING</b>				
5.1 Sun shade	RAL 7035. 70M zinc rich as Primer+ 130~150m Epoxy as Intermediate+ 50~70m Polyurethane as Top coat			
5.2 Door	RAL 7035 70M zinc rich as Primer+ 130~150m Epoxy as Intermediate+ 50~70m Polyurethane as Top coat			
5.3 Meter panel	RAL 7035 70M zinc rich as Primer+ 130~150m Epoxy as Intermediate+ 50~70m Polyurethane as Top			
5.4 Outside	RAL 7035 70M zinc rich as Primer+ 130~150m Epoxy as Intermediate+ 50~70m Polyurethane as Top coat			



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## 6. DIMENSIONS & WEIGHT

6.1 Body Dimension                      Height 80 cm              Depth 65 cm              Width 60 cm

6.2 Overall Dimension                      Height 115 cm              Depth 85 cm              Width 80 cm

6.3 Weight (Net)    170 kg

6.3 Weight (Gross)    295 kg

## 7. TRANSFORMER OIL

7.1 Capacity    150 Liter                      7.2 Class    1

## 8. TERMINALS

8.1 Input terminal                       Phase     MP     Half Cell     M 10     Bruss     Rail Mounted

8.2 Earth Terminal                       M10     Bruss     Rail Mounted

8.3 Output terminal                       +DC     -DC     Alarm     M 10     Bruss     Rail Mounted     AIO/DIO

## 9. CASE CONFIGURE

9.1 Thickness (all parts of transformer (main tank, cover, except sun shade) )                       2mm                       3mm

9.2  Carbon Steel     Stainless Steel

## 10. HOUSING TYPE

O 1                       A 1                       O 2                       A2                       O 3                       A3                       O 4                       A4

O5                       A5                       O6                       A6                       U1                       U2                       U3                       U4

## ELECTRICAL CHARACTERISTICS

### 11. AC INPUT RATING

11.1 Phase                       1 Ph.                       3 Ph.

11.2 Input voltage                       230V                       400V

11.3 Input current                      13Amp (full load)    0.2Amp (no load)    35 Amp (max inrush current)

11.4 Variation                       $\pm 10\%$

11.5 Frequency                      50 HZ  $\pm 5\%$

### 12. DC OUTPUT RATING

12.1 Output DC voltage    75 Volt                      12.2 Ripple voltage                       $\leq 2\%$                       12.3 Output current                      25 Amp

### 13. DC OUTPUT CONTROL

13.1 63 Step

13.2 Constant Voltage & Auto Trans

13.3 Constant Current

13.4 Constant Voltage & Constant Current

13.5 Constant Voltage & Constant Current & Reference Potential

13.6 Constant Voltage & Constant Currents and regavolt

13.7 Reference Potential & Constant Voltage & Constant Currents and regavolt



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### 14.RECTIFYING UNIT

14.1 Stack Element                      SCR  Selenium  Silicon

14.2 Rectifier Mode                      1 Phase     3 Phase

14.3 Rectification type                       Full Wave Half Control Bridge     Full Wave Full Control Bridge(6 pulse)  
 Full Wave Full Diode Bridge

14.4. Peak inverse voltage    1200 Volt

### 15.POWER TRANSFORMER RATING

15.1. No. of phase -1—Ph .

15.2. Frequency 50 Hz. .

15.3. Primary input voltage -230—Volt

15.4. .Rating Secondary Power    2.7 KVA (Apparent power)    2.27 KW (Active power)

15.5. Primary input Current 13 Amps.

15.6. Secondary output voltage (V<sub>OUTPUT AC</sub>) 100 Volt.

15.7. Secondary output Current 28 Amps(AC).

15.8. Vector Group ...

15.9. Winding Insulation Class F & Temperature Rise Class E  
Winding temp. rise: 60.9K  
Insulation Oil temp. rise: 55.9K  
Winding Hot spot: 73.9K

15.10. Efficiency Full Load--95-- %

15.11. Cos  $\phi$  = -0.9--

15.12. Isolation: Double wounded    –    Electro Static shield : 2 KV

### 16.PROTECTION

16.1. Surge Protection for input     16.9. Over Voltage Protection for Output

16.2. Surge Protection for output     16.10. Suppressor Protection

16.3. Current limit for DC circuit     16.11. Oil gage protection

16.4. phase monitoring relay for input     16.12. Humidity protection

16.5.Volt meter fuse     16.13. Temperature Oil protection

16.6. Input MCB     16.14. Controller fuse

16.7. Input MCCB     16.15. Output Fast DC MCB

16.8. Fast fuse     16.16. Over Voltage Protection for Input

### MEASURING INSTRUMENT

#### 17. MECHANICAL MEASUREMENT DEVICE

17.1 Dial time thermometer scale from 0 To 120 °C

17.2 Oil Gage



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## 18. ELECTRICAL MEASUREMENT DEVICE

18.1 <input checked="" type="checkbox"/> Analog multi meter	18.2 <input type="checkbox"/> Digital multi meter	18.3 <input type="checkbox"/> PLC base
18.3.1 <input checked="" type="checkbox"/> AC input voltmeter scale from .....0.... To...300V...(Signal lamp type voltmeter)		
18.3.2 <input type="checkbox"/> AC input Ammeter scale from ..... To.....		
18.3.3 <input checked="" type="checkbox"/> DC output voltmeter scale from ...0.....To...100V...		
18.3.4 <input checked="" type="checkbox"/> DC output Ammeter scale from ...0.....To...30A.....		
18.3.5 <input checked="" type="checkbox"/> Reference cell voltage scale from ...0...To...10A...		
18.3.6. <input type="checkbox"/> hour meter		
18.3.7. <input checked="" type="checkbox"/> Temperature Meter		
18.3.8. <input checked="" type="checkbox"/> Oil Meter		
18.3.9. <input type="checkbox"/> Phase Meter		

## 19. FITTING REQUIRED

19.1. lifting lugs <input checked="" type="checkbox"/>	19.6. Padlock for isolating means <input checked="" type="checkbox"/>
19.2. Oil level site gage <input checked="" type="checkbox"/>	19.7. Provision for remote alarm <input type="checkbox"/>
19.3. Oil Drain Cock <input checked="" type="checkbox"/>	19.8. Schematic circuit diagram plate <input checked="" type="checkbox"/>
19.4. Sun shade <input checked="" type="checkbox"/>	19.9. Oil breather <input checked="" type="checkbox"/>
19.5. Rating plate <input checked="" type="checkbox"/>	19.10. Maximum noise level 65 Db(A)

## 20. OPERATION

20.1. Continues & Timer Selector Switch <input checked="" type="checkbox"/>	
20.2. Timer Controller (from 1 to 300 sec ) <input checked="" type="checkbox"/>	20.4 SCR & Variac switch <input checked="" type="checkbox"/>
20.3. Constant voltage/ Constant Current /RP Switch <input checked="" type="checkbox"/>	20.5 Constant Voltage & Constant Current <input type="checkbox"/>

## 21. MONITORING

Power line carrier <input type="checkbox"/>	Radio <input type="checkbox"/>	GSM <input type="checkbox"/>
GPRS <input type="checkbox"/>	Optical fiber <input type="checkbox"/>	Wifi <input type="checkbox"/>

## 22. SPARE PART

B. <input checked="" type="checkbox"/> No <input type="checkbox"/> yes.	B. <input checked="" type="checkbox"/> No <input type="checkbox"/> yes.
22.1 COMMISSIONING	22.2 TWO YEARS SPARE PART