

 <p>PG PARS CO Corrosion control &amp; Cathodic protection شرکت پی جی پارس سپاسی داتا</p>	<h2>DATA SHEET</h2>	
<b>Document Title:</b>	Transformer Rectifier –SCR & REG-3 PH-50V 50A	<b>Rev:01</b>
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# Transformer Rectifier 50 V 50 A SCR & REG

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



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## GENERAL DESIGN DATA

### 1. SITE CONDITION

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 -90-- 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"/>

### 2. DEGREE OF INGRESS PROTECTION

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				

### 3.COOLING SYSTEM

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

### 4.MOUNTING

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	

### 5.COLOR FINISHING

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 125 cm              Depth 65 cm              Width 60 cm

6.2 Overall Dimension                      Height 165 cm              Depth 95 cm              Width 90 cm

6.3 Weight (Net)      282 kg

6.3 Weight (Gross)      450 kg

## 7. TRANSFORMER OIL

7.1 Capacity      210 Liter

7.2 Class      1

## 8. TERMINALS

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

8.2 Earth Terminal                       M10       Brass       Rail Mounted

8.3 Output terminal                       +DC       -DC       Alarm       M 10       Brass       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      6 Amp (full load)      0.1 Amp (no load)      15 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      50 Volt                      12.2 Ripple voltage                       $\leq 2\%$                       12.3 Output current                      50 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 <input checked="" type="checkbox"/> Selenium <input checked="" type="checkbox"/> Silicon <input checked="" type="checkbox"/>
14.2 Rectifier Mode	1 Phase <input type="checkbox"/> 3 Phase <input checked="" type="checkbox"/>
14.3 Rectification type	<input type="checkbox"/> Full Wave Half Control Bridge <input checked="" type="checkbox"/> Full Wave Full Control Bridge(6 pulse) <input checked="" type="checkbox"/> Full Wave Full Diode Bridge
14.4. Peak inverse voltage	1200 Volt

### 15.POWER TRANSFORMER RATING

15.1. No. of phase --3-- Ph.
15.2. Frequency 50 Hz.
15.3. Primary input voltage -400—Volt
15.4. .Rating Secondary Power 3.4 KVA (Apparent power) 3 KW (Active power)
15.5. Primary input Current 5.8 Amps.
15.6. Secondary output voltage (V <sub>OUTPUT AC</sub> ) 47 Volt.
15.7. Secondary output Current 42 Amps(AC).
15.8. Vector Group DD0
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 <input checked="" type="checkbox"/>	16.9. Over Voltage Protection for Output <input checked="" type="checkbox"/>
16.2. Surge Protection for output <input checked="" type="checkbox"/>	16.10. Suppressor Protection <input checked="" type="checkbox"/>
16.3. Current limit for DC circuit <input checked="" type="checkbox"/>	16.11. Oil gage protection <input checked="" type="checkbox"/>
16.4. phase monitoring relay for input <input checked="" type="checkbox"/>	16.12. Humidity protection <input type="checkbox"/>
16.5.Volt meter fuse <input checked="" type="checkbox"/>	16.13. Temperature Oil protection <input checked="" type="checkbox"/>
16.6. Input MCB <input checked="" type="checkbox"/>	16.14. Controller fuse <input type="checkbox"/>
16.7. Input MCCB <input type="checkbox"/>	16.15. Output Fast DC MCB <input checked="" type="checkbox"/>
16.8. Fast fuse <input type="checkbox"/>	16.16. Over Voltage Protection for Input <input checked="" type="checkbox"/>

### MEASURING INSTRUMENT

#### 17. MECHANICAL MEASUREMENT DEVICE

17.1 Dial time thermometer scale from 0 To 120 °C <input checked="" type="checkbox"/>
17.2 Oil Gage <input checked="" type="checkbox"/>



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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...75V...		
18.3.4 <input checked="" type="checkbox"/> DC output Ammeter scale from ...0.....To...75A.....		
18.3.5 <input type="checkbox"/> Reference cell voltage scale from .....To.....		
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 checked="" 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 type="checkbox"/>	20.5 Constant Voltage & Constant Current <input checked="" 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