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# HVDC Zero-flux-Current Measuring System

许继集团有限公司

2020

**Hello!,everyone,**

**This is Mr.Jia,Engineer Lin is busy on the site of Lahore Station,because of net today I and Mr. Liu will instead of him to introduce the Zero-flux current Measuring Systems.**

**I`m from XJ Group corporation.**



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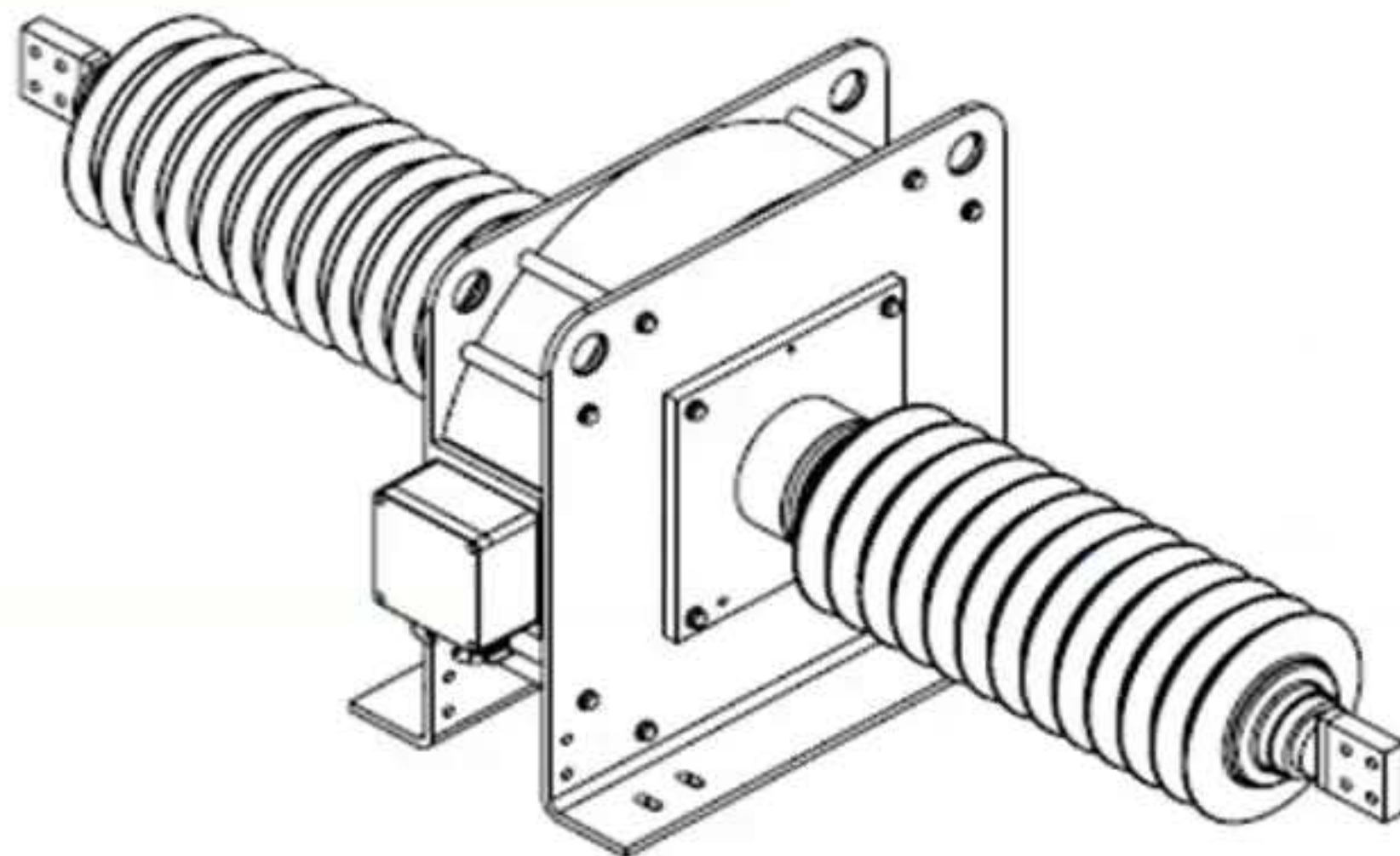
**5. Parameters**

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**Zero-flux current Measuring Systems is for HVDC applications.**

**It can measure direct and alternating currents up to 6 kA (continuously)  
with very high accuracy and stability**





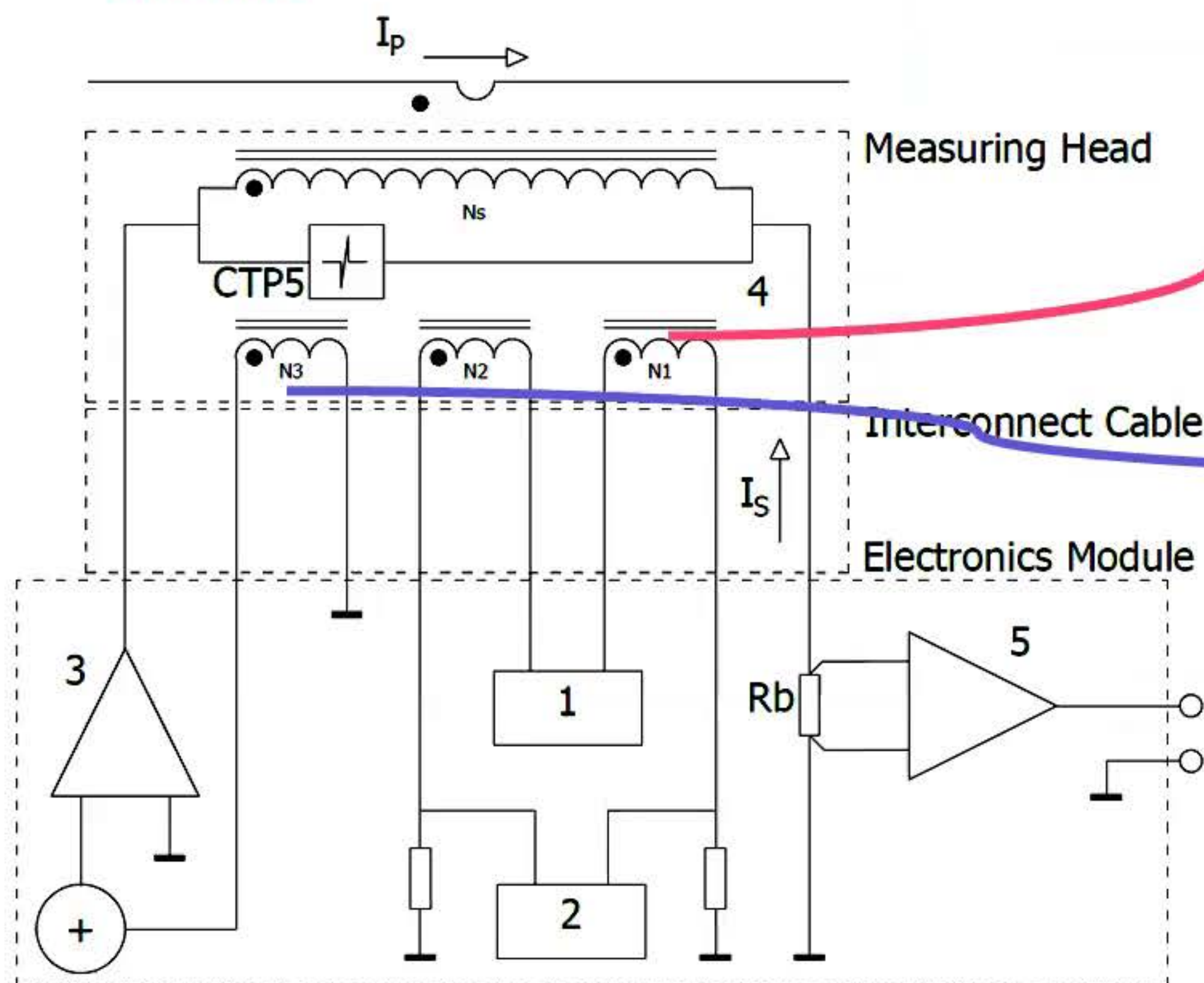
# The basic principle



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The primary current  $I_p$  generates a magnetic flux that will be counteracted by the current  $I_s$  in the secondary winding ( $N_s$ ) of the measuring head (4). Any remaining flux is sensed by three toroidal-wound ring cores located within the secondary winding volume.



Two cores ( $N_1$ ,  $N_2$ ) are used to sense the DC part of the remaining flux. The third core  $N_3$  senses the AC part. The CTP5 protects the measuring head.



# Structure



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**Measuring Head**



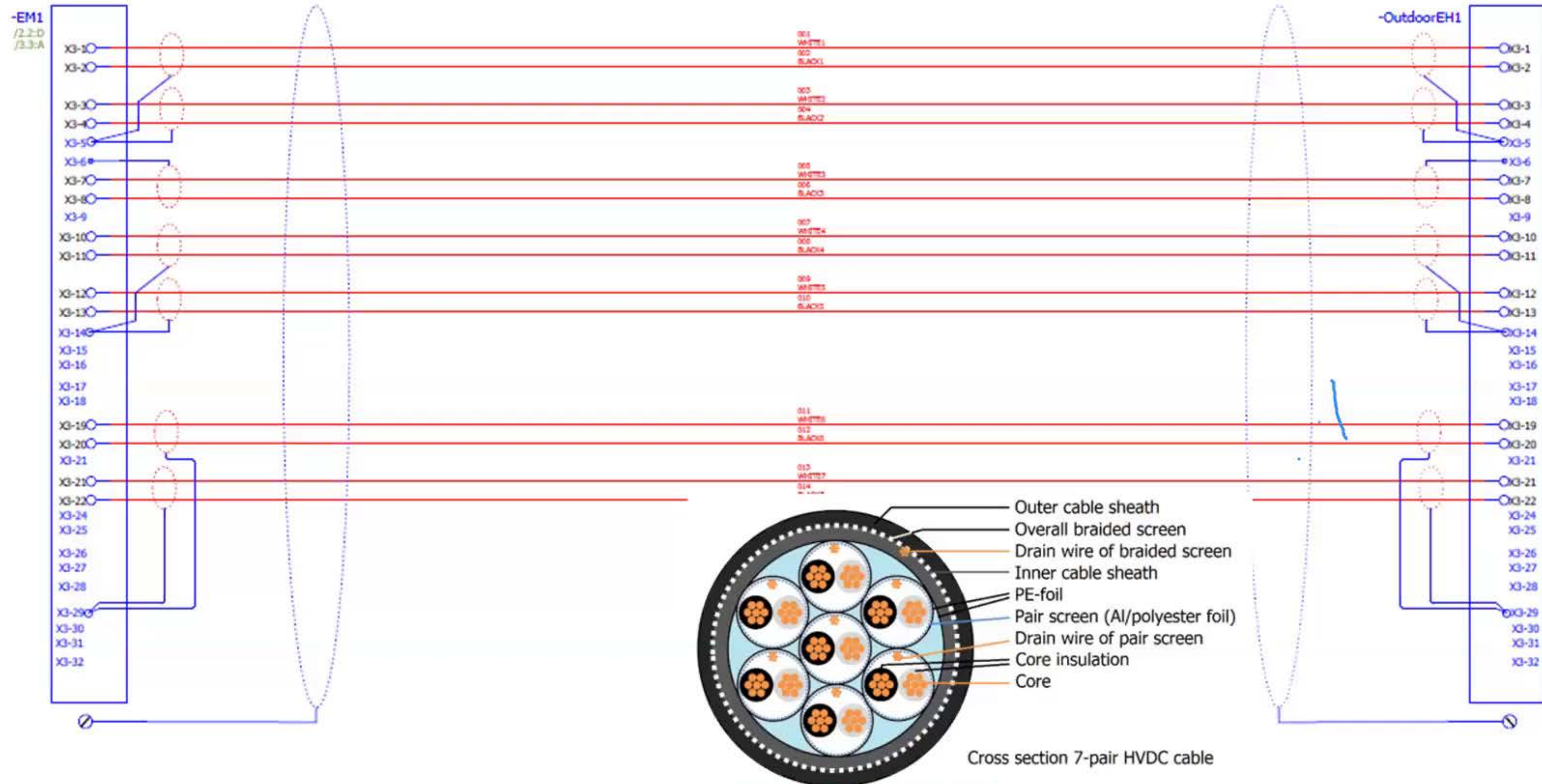
**Electronics Module**



# Structure



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Measuring Head

CABLE

Electronics Module<sup>9</sup>



## Measuring Head



## Bushing



**Measuring heads with integrated bushings must be mounted horizontally**



## Cabinet



**The electronics is housed in a 3U high chassis for 19-inch rack mounting**



**The primary rated current can be as high as 4 kA typical. The output voltage at rated current will be as defined by the customer, but normally it is 2 V. In that way it is possible to measure overload currents up to 300 % (6 V) and transient currents up to 600 % (12 V).**



**In Matiari-Lahore  $\pm 660\text{Kv}$  HVDC Transmission Project, below parameters are employed.**

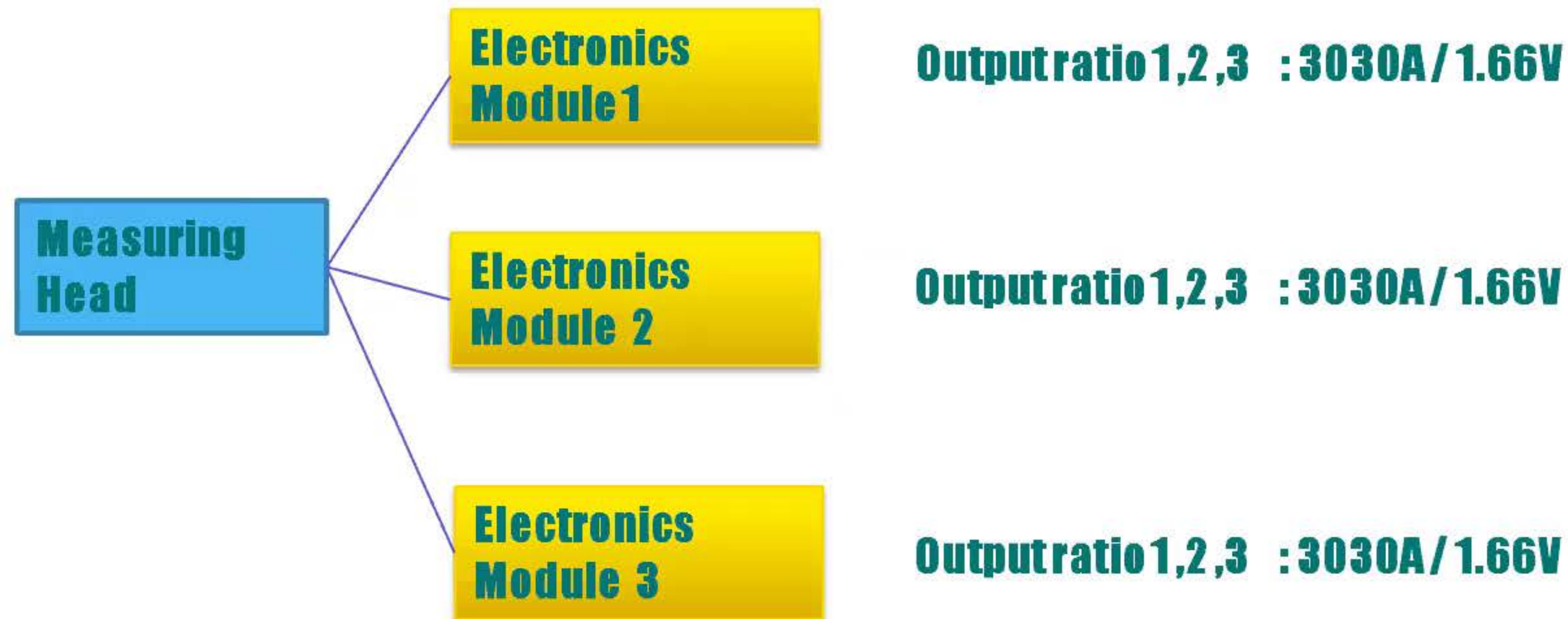
**Rated primary DC current  $I_{dN}$ : 3030.3 A**

**Rated secondary measuring rate V/A:  $1.66/(I_{dN})$**

**Accuracy:**

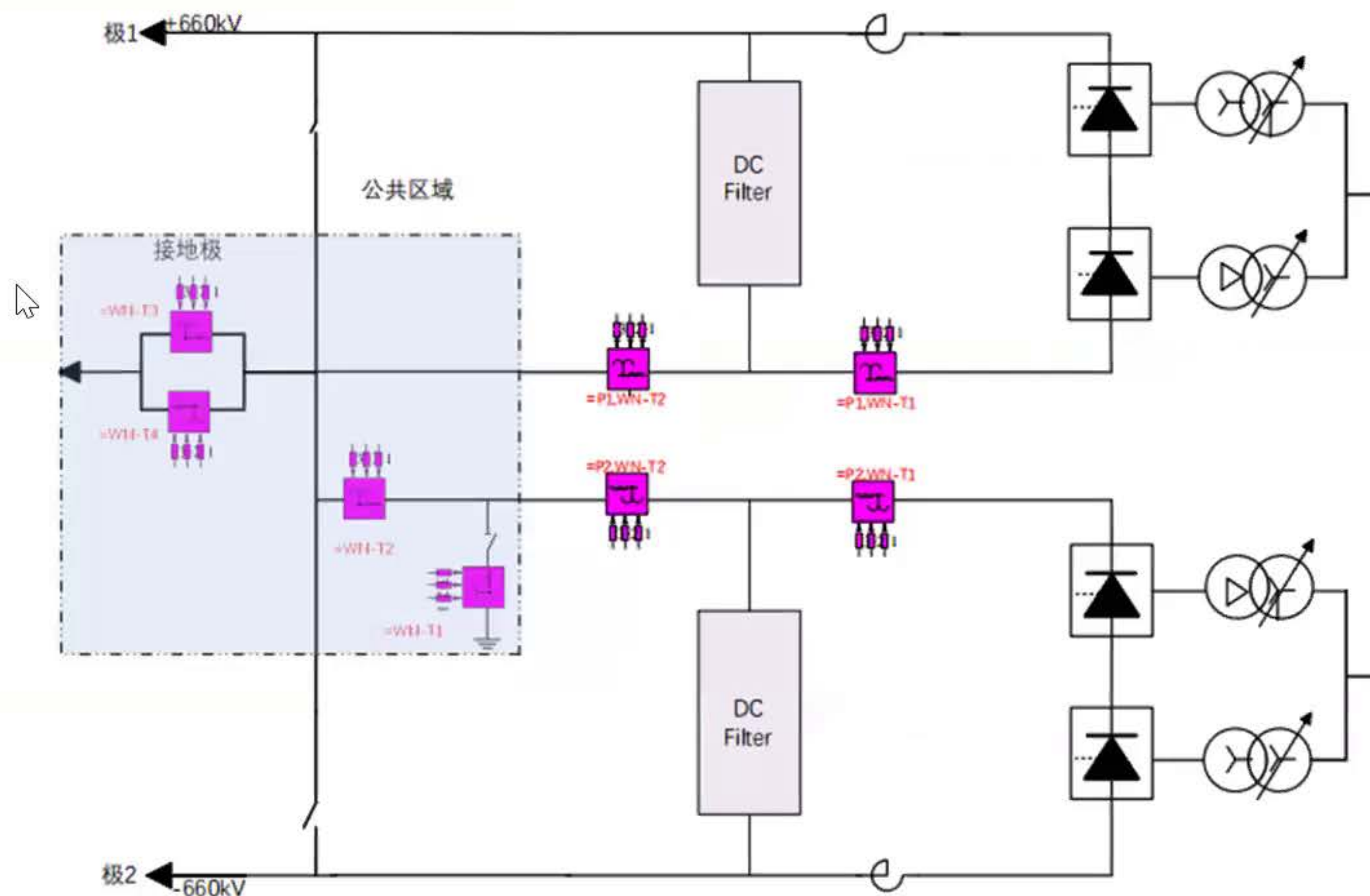
a. 10-150% $I_d$	0.2%
b. 150-300% $I_d$	1.5%
c. 300-600% $I_d$	10%







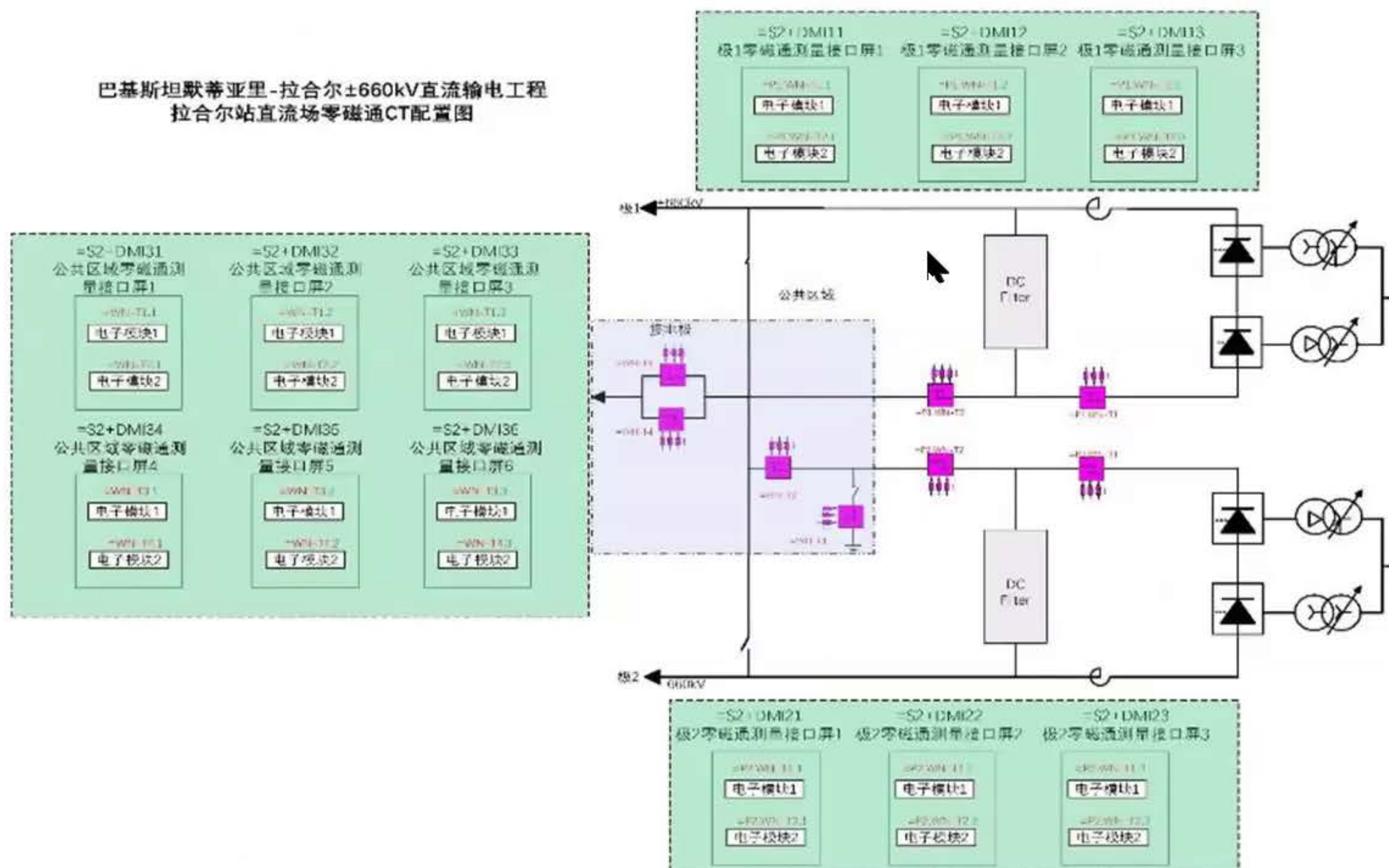
## The location of Measuring Head in Lahore Station





## The cabinet setting in Lahore Station

巴基斯坦默蒂亚里-拉合尔±660kV直流输电工程  
拉合尔站直流场零磁通CT配置图







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感谢!