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**Single Phase - Battery Operated  
Automatic Transformer Turns Ratiometer  
Test System**

**Model: TR-1  
Model: TR-1P**

**Command Set**

# TR 1 Communication Port

Hardware Connection:

Serial Interface RS232

Protocol: 19200 Baud, 8 Bit, 1 Stop bit, no parity

5 pole Redel Connector

Pin 2 TXD Data TR-1 to Computer

Pin 1 RXD Data Computer to TR-1

Pin 5 GND

9 pole D-Sub (with option TRO-107 – RS232 cable 30144-xxx)

Pin 2 TXD Data TR-1 to Computer

Pin 3 RXD Data Computer to TR-1

Pin 5 GND

## TR 1 Commands

gvl	Get Version	Type, Version, S/N, RIN (Raytech Id Number) eg: TR-1,1.02,284134,710201
gvz	Get Version	same as gvl Reloads the auto switch off timer for 120sec Send this command every 5sec to avoid auto switch off
ma x y	Measure	Measures  x = “ “ no results during Measurement x = 1 during measuring, the actual Values are sent to the Host After approx. 10 sec the TR1 stops automatically x = 11 measure and display values of the Transformer without time-out Command er stops measurement y = Voltage [1,5,10,40]  Ret: “*6 Wait” immediately to confirm command MA,a,b,c,d“ a -> Ratio of Phase x b-> Angle of Phase deviation (units in degrees) c -> Current of Phase x ( in mA) d -> 0
er	Stop Measurement	
ea	Keeps On	Keep the TR1 alive, Send this command to the TR1 to keep the Power on. After a time of 120s
sr a	Set Testvoltage	Set Testvoltage a = [1,5,10,40]

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