

# Process Multimeter (CA450)



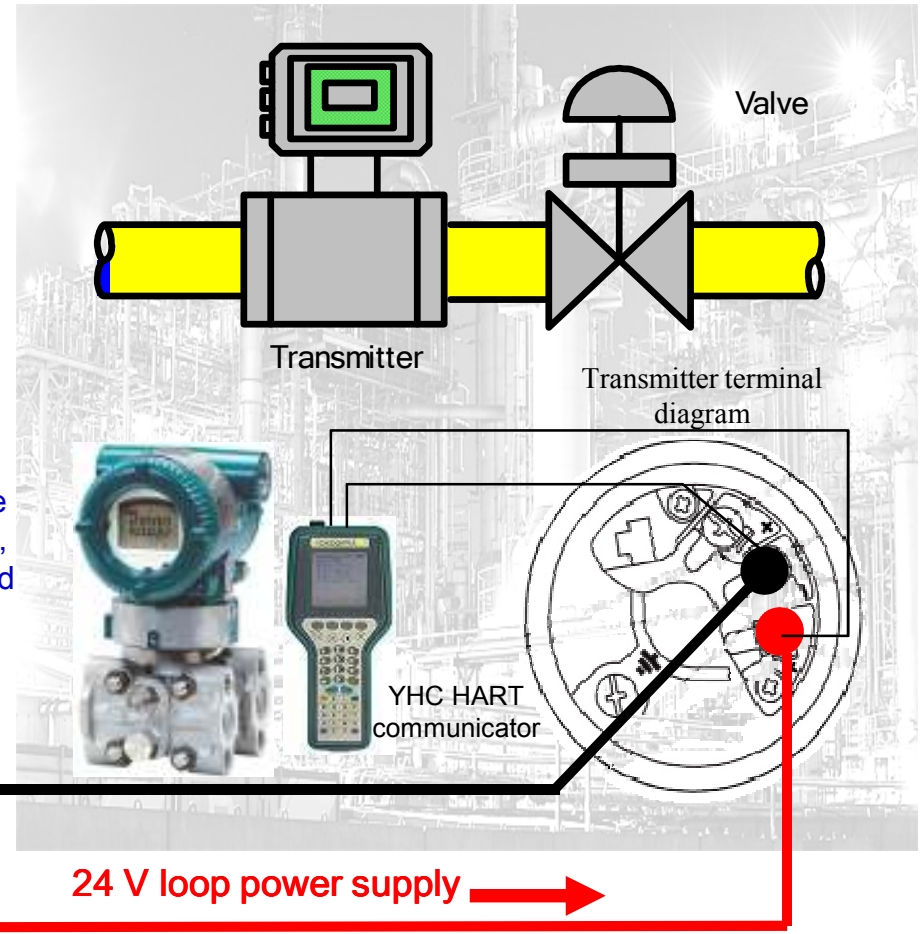
## ◆ 2-wire transmitter loop check (mA LOOP POWER)



### Example connection for a pressure transmitter

- Loop check function
- Supplies 24 VDC power to the transmitter, and measures mADC output
- Precisely measures instrumentation signals:  
DC mA 0.05%/30.000 mA

• Using the setting for HART mode with loop power (250 Ω resistance), enables HART communications and brain communications



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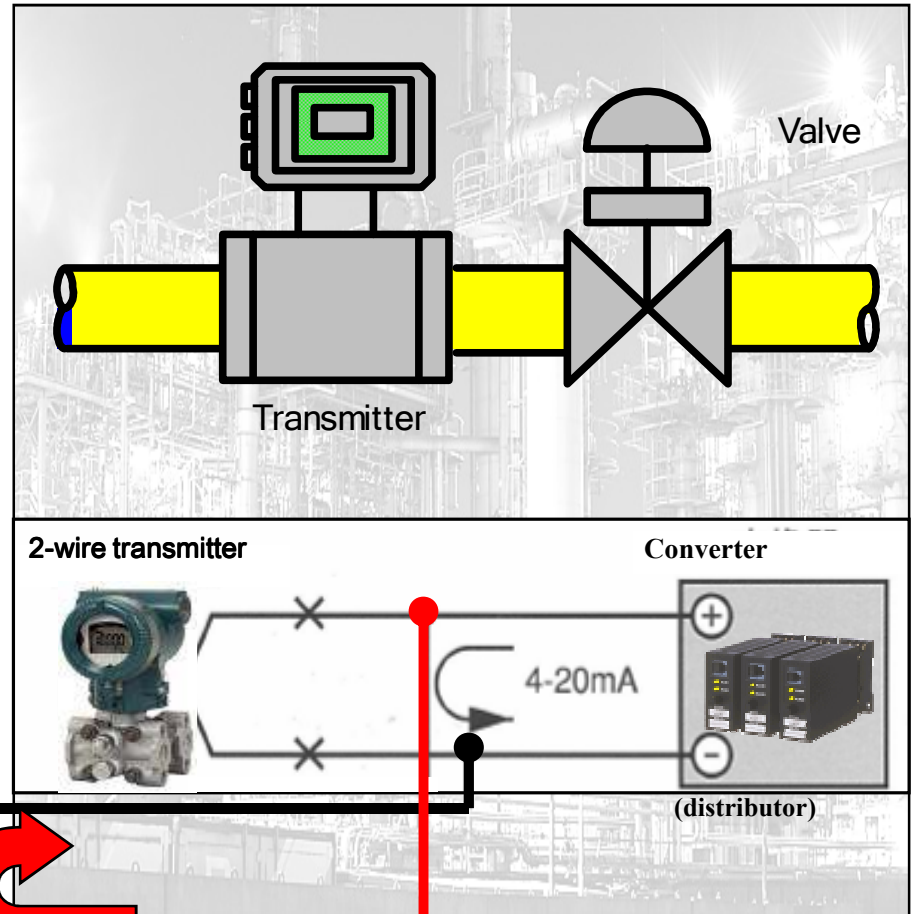
## ◆ 2-wire transmitter simulator (20 mA SINK)



### Transmitter simulator

• With the CA450, transmitter I/O can be checked (simulated) by drawing in designated currents (SINK) from the external voltage generators (distributors) of your instrumentation.

\* As in the figure on the right, applied voltage is polar: take care not to apply voltage in the opposite direction.



Constant current output of 4-20 mA

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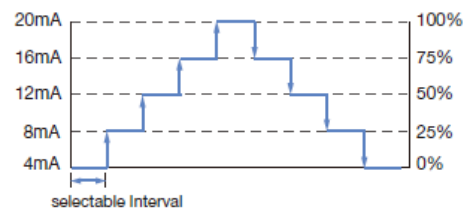
## ◆ Operating check and adjustment for valve and positioner

### Valve positioner recovery work

- Zero span adjustment  
Using Span check function
- Step response  
Response test with auto-step function
- Hunting  
Response test with auto-step (FAST)
- Stick-slip  
Response test with sweep output
- Valve open/close error  
Input output error test with 25% step output

***Complete all these tasks with a single process multimeter !***

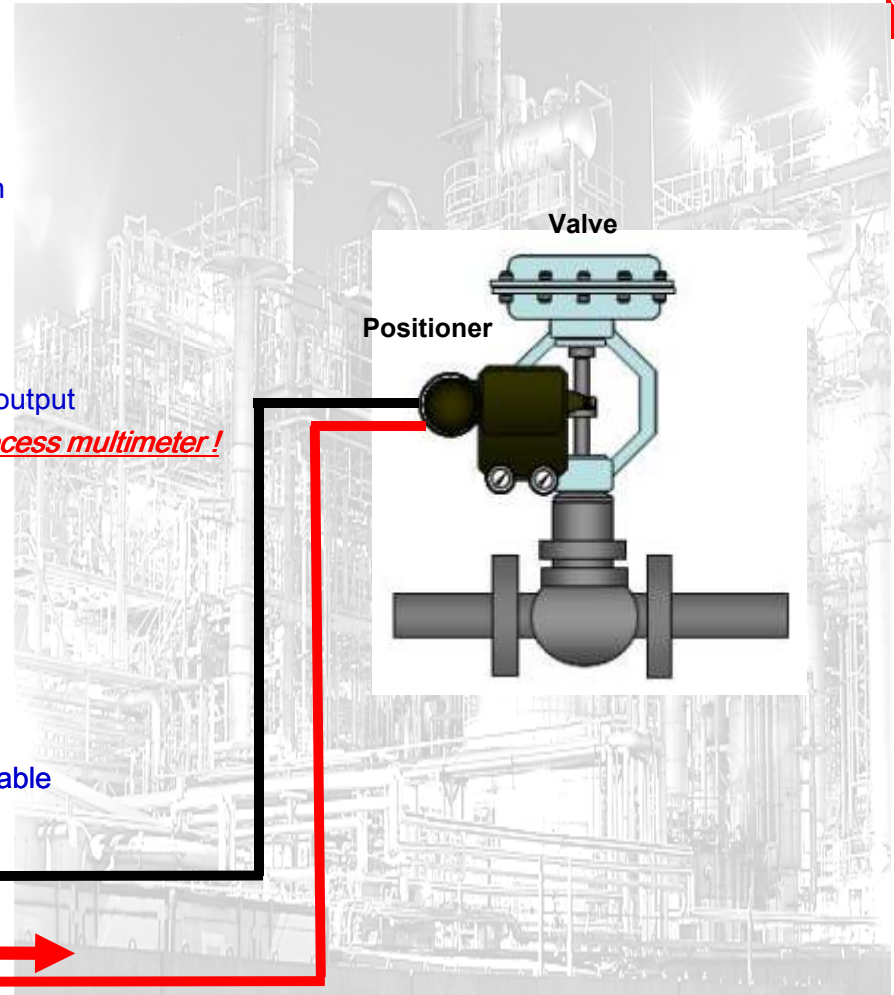
### Auto-step output



Fast: 5sec, Slow: 15/30/45/60 sec selectable



Constant current output of 4-20 mA



# Process Multimeter (CA450)



DL  
WT  
SL  
GS  
CA

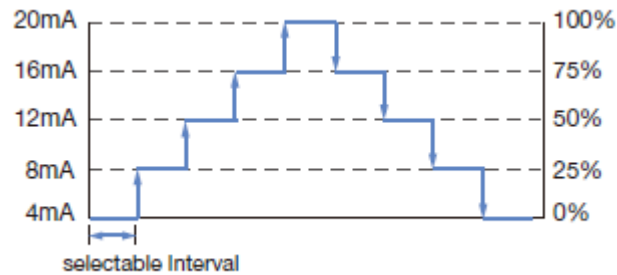
## ◆ 4–20 mA step/Auto-step/sweep output



### Checking controller programs

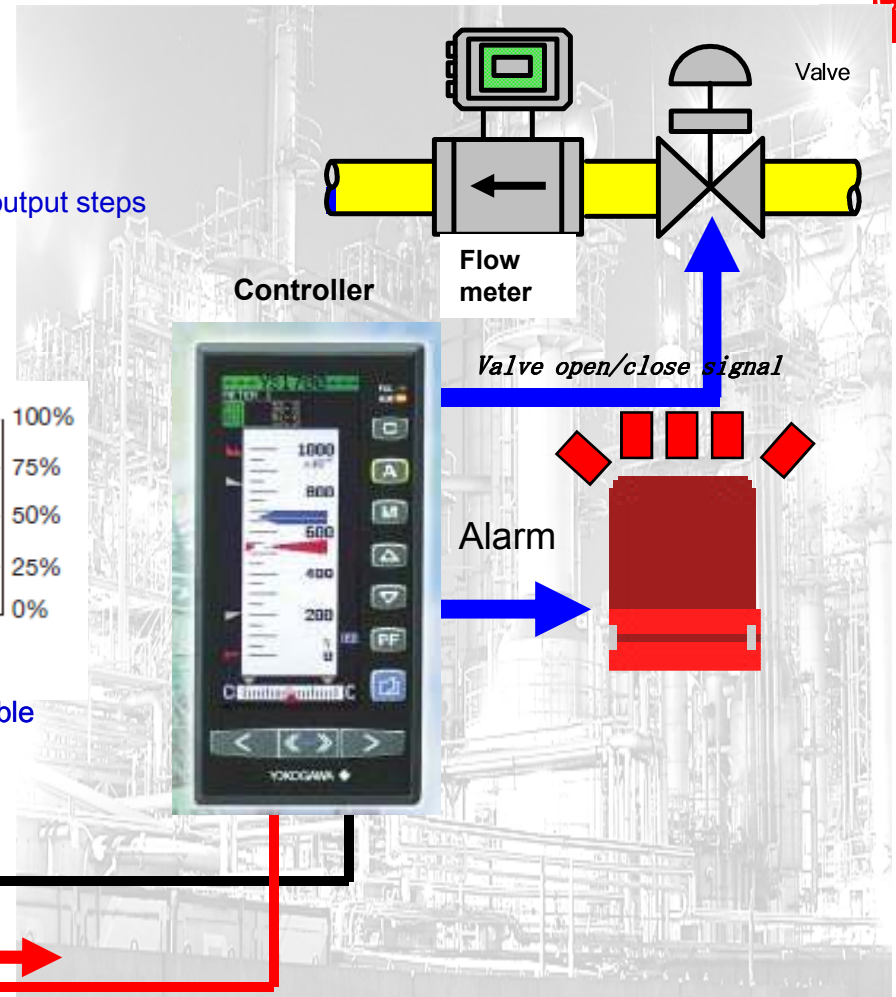
#### 4–20 mA step generation

- Switches between 4 and 20mA in 4mA output steps making work more efficient. Ideal for checking controller programs.



Fast: 5sec, Slow: 15/30/45/60 sec selectable

Constant current output of 4–20 mA



Process Multimeter (CA450)



◆ Power supply peak-to-peak measurement (peak hold)



Measuring power supply peak-to-peak

• With the CA450, peak value (instantaneous) detection is possible in DC voltage measurement (DCV) mode. This enables easy measurement of power supply peak-to-peak during DCS inspection.

\* The value relative to a reference value can also be displayed during peak value measurement.

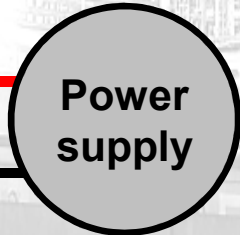
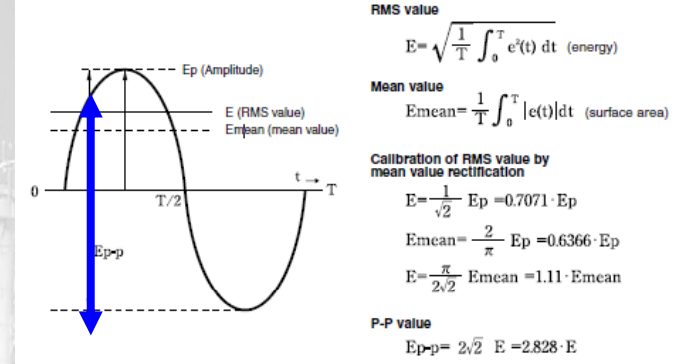


Figure 1. RMS and Mean Values of Sine Wave



P-P measurement: 6 ms or higher



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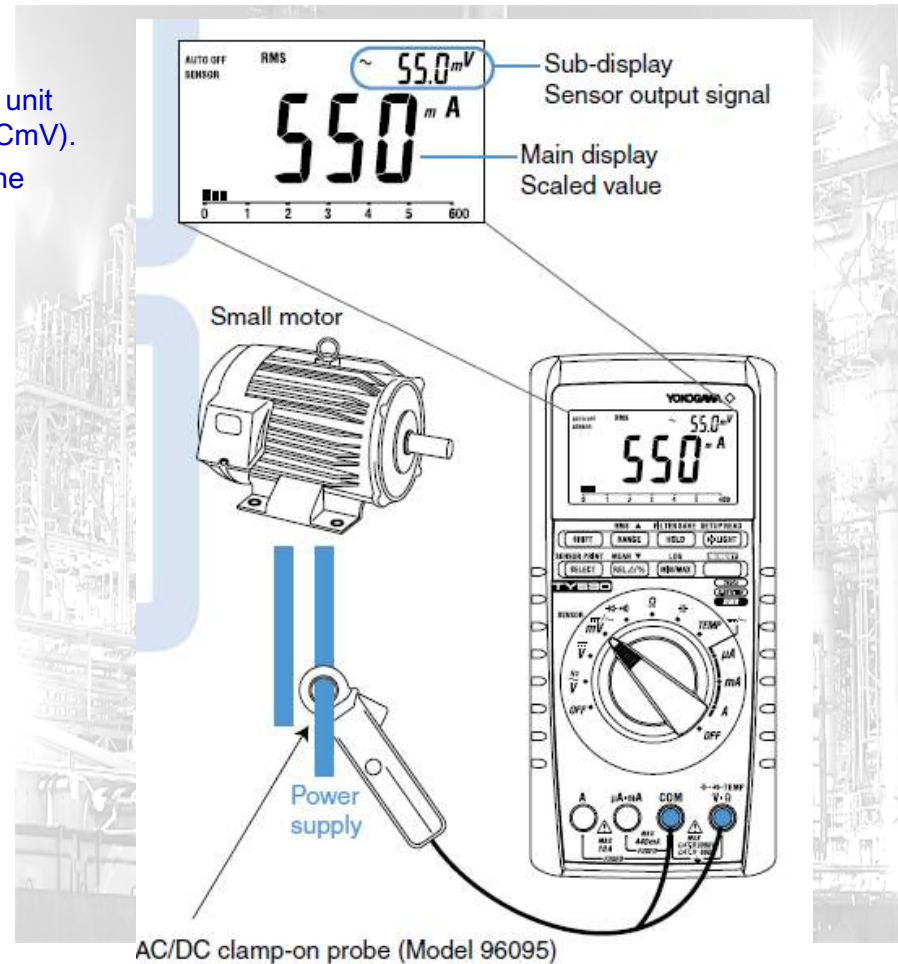
## ◆ AC/DC current measurement (sensor mode)



### Sensor mode

- Enables scaling to any coefficient and unit relative to the input voltage (ACmV or DCmV).
- From the DCV range, easily set with the SHIFT+SELECT keys.
- Measurable ranges:  
DCA 0–180 A (96035)  
ACA 0.1–3000 A (960 series)

ACmV or DCmV



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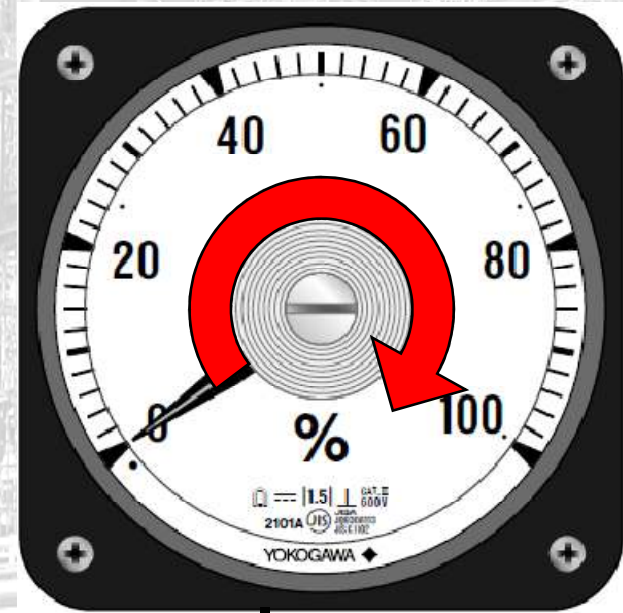
## ◆ Panel meter inspection



### Connection, reproducibility test, error test

- 4-20 mA sweep (SLOW 15 s/FAST 40 s)
- Zero point adjustment of a suppressed meter
- Step function for checking error at each point

Suppressed meter 2101A36



4-20 mA sweep/step output

