PRESENTATION

HOUR COUNTER MODEL CH 200

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PRESENTATION

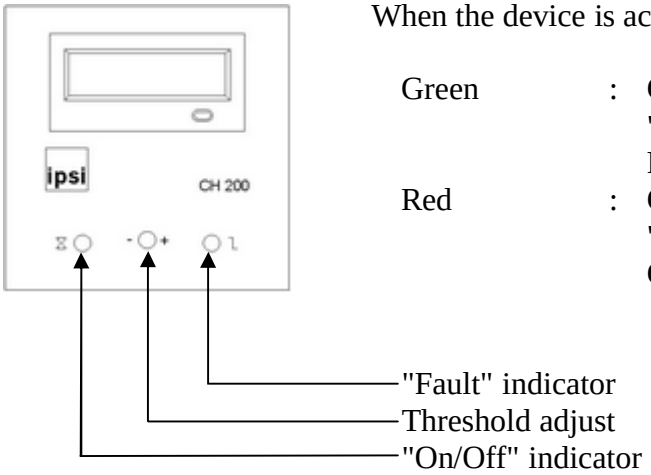
The CH 200 hour counter is used to record the operating time or the total duration of current delivery faults in a rectifier with reference to an adjustable threshold.

The CH 200 also allows remote transmission or control in case of mains or impressed current flow fault via two fail-safe relays.

The CH 200 can be configured in two versions:

- The **CHI 200** controls the current delivered by the rectifier transformer via a 100 mV shunt and a user-defined threshold.
- The **CHE 200** controls the potential of the structure to be protected via a $Cu/CuSO_4$ electrode and a user-defined threshold.

OPERATION



When the device is activated, the "On/Off" indicator shows the counting mode:

Green	:	Counting in "Normal" mode. "Fault" indicator green. Factory setting.
Red	:	Counting in "impressed current flow fault" mode. "Fault" indicator red. Customer setting.

MODEL CHI 200

Once the minimum current flow threshold of the rectifier has been set, the CHI continuously compares the voltage across a shunt with the threshold value.

When the current flow falls is lower than the threshold value, the CHI 200 switches to "impressed current flow fault" mode, activates the "Fault" indicator in red, stops the counting, and activates the external "Takeoff current flow fault" command.

When the current flow is higher than the threshold value, the CHI 200 switches to "Normal mode", activates the "Fault" indicator in green, starts the counting, and cancels the external "Fault" commands.

In case of power outage, the CHI activates the external "Mains fault" and "impressed current flow fault" commands.

MODEL CHE 200

Once the minimum potential threshold of the structure to be protected has been set, the CHE continuously compares the structure potential referred to a $Cu/CuSO_4$ electrode with the threshold value.

When the potential is higher than the threshold value, the CHE 200 switches to "impressed current flow fault" mode, activates the "Fault" indicator in red, stops the counting, and activates the external "impressed current flow fault" command.

When the potential is lower than the threshold value, the CHE 200 switches to "Normal mode", activates the "Fault" indicator in green, starts the counting, and cancels the external "Fault" commands.

In case of power outage, the CHE activates the external "Mains fault" and "impressed current flow fault" commands.

SETTING UP THE CHI 200

To adjust the threshold value, set the rectifier output current to $I_{threshold}$ minus 1.5% of I_{max}.

After thirty seconds, switch the CHI 200 to "impressed current flow fault" mode by rotating the threshold adjust trimmer. Then slowly rotate the threshold adjust trimmer towards minus (–) until the counter switches to "Normal" mode.

Note: I_{max} = max. current flow of rectifier (100 mV shunt)
3% of I_{max} = $I_{threshold}$ – 1.5% of I_{max} = 90% of I_{max}

SETTING UP THE CHE 200

To adjust the threshold value, set the structure potential to $E_{threshold}$ + 50 mV.

After thirty seconds, switch the CHE 200 to "impressed current flow fault" mode by rotating the threshold adjust trimmer. Then slowly rotate the threshold adjust trimmer towards minus (–) until the counter switches to "Normal" mode.

Note: –90 mV = $E_{threshold}$ + 90 mV = –3000 mV

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TECHNICAL SPECIFICATIONS

MECHANICAL

Dimensions	:	72 x 72 x 110 mm
Mass	:	400 grams
Materials	:	Polycarbonate and ABS
Front panel color	:	Pantone® Process Black U & Cool gray 3U
Installation cutout	:	67 x 67 mm

ELECTRICAL

Mains supply	:	230 V 50 Hz
Power consumption	:	Max. 2.3 VA
Protection	:	MOV on mains input, 330 V / 21 J Ultra quick blow fuse on mains input, 100 mA Transil on shunt or electrode input, 7.02 V / 500 W
Alarms (2 NC contacts on 1 Com)	:	Max. 2 A / 230 VAC – 50 VDC Rise time 2 msec

ENVIRONMENTAL

Operating temperature	:	–10 to +60°C
Storage temperature	:	–20° to +70°C

MISCELLANEOUS

Count range	:	99,999 hrs 59 min
Mains fault detection time	:	< 1 sec
Impressed current flow fault det. time	:	1 sec < X < 5 sec (5 sec integrator)
Thresholds	:	3% to 90% of I_{max}, or –100 mV to –3 V in potential mode
Threshold hysteresis	:	± 1.5% on I_{max}, or ± 90 mV in potential mode I_{max} = max. current flow of takeoff station
Operating life	:	Max. 20,000,000 status changes Max. 10 years for counting

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