



TM200™

Timer

Programma® Products

TM200™



Timer

A timer is often needed for use with the CSU600A™ current supply unit or ODEN A™ primary current injection test system. Testing relays with SVERKER 650™ also requires an extra timer if more than one timing cycle is to be measured.

Timer TM200™ is ideal for these tasks thanks to its precise accuracy, its broad application range and its compact dimensions. Timer TM200™ is the obvious choice for maintenance work in substations.

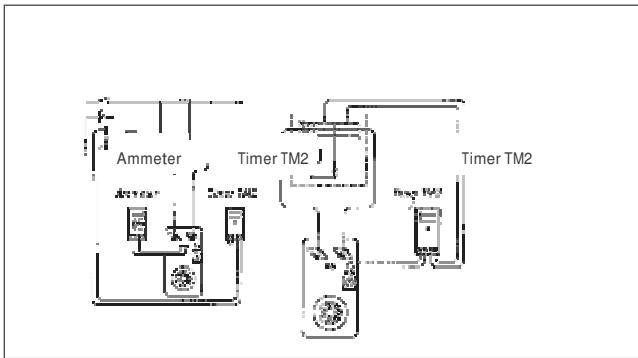
Application example

IMPORTANT!

Read the User's manual before using the instrument.

Primary test of protective relay equipment and low-voltage circuit breaker

1. Connect the CSU600A's current outputs across the current transformer (diagram a) or to the breaker terminals (diagram b).
2. Connect Timer TM200's start input to output T and the stop input to the protective relay equipment's auxiliary contact.
3. Set the current.
4. Execute the test.
5. Read the time from Timer TM200.



Specifications TM200

Specifications are valid at nominal input voltage and an ambient temperature of +25°C, (77°F). Specifications are subject to change without notice.

Environment

<i>Application field</i>	The instrument is intended for use in medium-voltage substations and industrial environments. Altitude <2000 m (6500 ft) above sea level.
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Temperature

Operating 0 °C to +50 °C (32 °F to +122 °F)

Storage & transport -20 °C to +55 °C (-4 °F to +131 °F)

Humidity 5% – 95% RH, non-condensing

CE-marking

<i>LVD</i>	Low Voltage Directive 73/23/ EEC am. by 93/68/EEC
<i>EMC</i>	EMC Directive 89/336/EEC am. by 91/263/EEC, 92/31/EEC and 93/68/EEC

General

Mains voltage 115/230 V AC (switchable), 50/60 Hz

Power consumption (max) 20 VA

Dimensions

Instrument, excl. handle 195 x 115 x 49 mm (7.7" x 4.5" x 1.9")

Instrument, incl. handle 252 x 132 x 49 mm (9.9" x 5.2" x 1.9")

Weight 1.0 kg (2.2 lbs)
2.7 kg (6 lbs) with accessories and carrying case

Test lead set, with touch-proof contacts 4 x 2 m (6.6 ft), 2.5 mm²

Measurement section

<i>Range</i>	0-999.999 s
<i>Resolution</i>	1 ms
<i>Inaccuracy</i>	±0.02% + 1 digit of displayed value

Timer inputs

<i>Max input voltage</i>	250 V AC/DC
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Voltage mode

<i>Parameter</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>
Threshold level, DC	10	12.5	15	V DC
Input current at threshold level DC Positive at red terminal	0.7	1.1	1.5	mA DC
Input current at threshold level DC Positive at black terminal	4	6	8	mA DC
Threshold level, Applying voltage at 50 Hz	5	10	15	V AC _{RMS}
Threshold level, Removing voltage at 50 Hz	60	90	140	V AC _{RMS}

Contact mode

<i>Parameter</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>
Threshold level	1	2	4	kΩ
Open circuit voltage	17	18.5	20	V DC
Short circuit current	8	10	13	mA DC

Input current at maximum input voltage, inrush

<i>Parameter</i>	<i>Min</i>	<i>Max</i>	<i>Unit</i>
At 250 V DC, Positive at red terminal	4.5	5	mA DC
At 250 V DC, Positive at black terminal	130	150	mA DC
At 250 V AC	55	80	mA DC

Input current at maximum input voltage, continuous

<i>Parameter</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>
At 250 V DC, Positive at red terminal	4	4.5	5	mA DC
At 250 V DC, Positive at black terminal	7	8	9	mA DC
At 250 V AC	2.5	3.3	4	mA DC

Ordering information

TM200

Complete with:
Test lead set GA-00082
Carrying case GD-00230

Art.No.

BE-29090

Programma Electric AB
Eldarvägen 4
SE-187 75 TÅBY
Sweden

Tel +46 8 510 195 00
Fax +46 8 510 195 95
E-mail programma@ge.com
Internet www.gepower.com

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