

# ELECTRONIC CHRONOMETER

TYPE CM20 SWISS CHRONO

**THOMMEN**  
AIRCRAFT EQUIPMENT



## GENERAL

The **THOMMEN** CM20 is a Swiss Made precision chronometer designed to operate under the most stringent operating conditions and was designed according to the latest civil and military avionics standards.

It features a three line display with light digits on dark background (negative image). It supports the simultaneous indication of a combination of clock- and timer-function reading and has several day/night mode backlight options including NVIS A and B compatibility. The time base is supplied by a dedicated internal power reserve to provide the time-keeping function even when the aircraft power is removed.

## PARAMETERS

- 24 hour clock for UTC or Local Time (LT) in 12/24 hrs format
- Up or down counting Elapsed Timer (ET/ETD)
- Maintenance Timer (MTH)
- Simultaneous display of Clock and either elapsed or flight timer readings
- Flight Timer (FT) with pre-settable alarm (FTA)
- ETD and FTA with a common switching output for an external signaling device
- Flight Timer (FT, FTA and MTH) remotely controlled by a configurable switch input
- Remote setting functions via serial link (RS-232) in master and slave mode
- Installer accessible installation feature settings
- Installer customizable Lighting Dimming Curve for day and night mode
- Lighting options (white/white, white/red, white/green NVIS A&B)
- Comprehensive Built In Test with internal maintenance and failure log

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## PERFORMANCE SPECIFICATION

TIME BASE ACCURACY:	better than $\pm 0.2$ s / 24 h
MTBF:	> 20.000 hrs. MIL-HDBK-217
LIGHTING OPTIONS FOR NVIS EQUIPMENT COMPATIBILITY:	MIL-STD-3009 TYPE I CLASS B or RTCA/DO-275 or OST 1 00415-81

## ELECTRICAL CHARACTERISTICS

SUPPLY POWER:	Nominal 14 or 28 VDC $\leq 300$ mA @ 28 VDC
LIGHTING MODE INPUT SIGNAL (CENTRAL INSTRUMENT PANEL DIMMING MODE SIGNAL):	0 to Supply Power Voltage sinks $\leq 5$ mA against power return
FT & MTH RUN SIGNAL:	0 to Supply Power Voltage sinks $\leq 5$ mA against power return
ETD & FTA ALARM OUTPUT SIGNAL:	Solid state switch output sinking $\leq 1000$ mA against power return

## ENVIRONMENTAL CONDITIONS

TEMPERATURE:	-55° C to +85° C ground survival and storage -45° C to +70° C continuous operational further options are available on request
COOLING:	none
ALTITUDE:	55.000 ft. for continuous operational and storage further options are available on request
HUMIDITY:	$\leq 99\%$ rel. humidity non condensing for continuous operational and storage

## QUALIFICATIONS

RTCA/DO-160F:	[B22]BBB[U2]EWFSFSY[ZI]AZ[ZC][ZN] [RR]M[A3H33]XXAC
MIL-STD-810F:	Method 514.5 Method 505.4 Procedure I
RTCA/DO-178B:	Software Level D
RTCA/DO-254:	DAL D

## MECHANICAL CHARACTERISTICS

FORM FACTOR:	2" Semi ARINC housing L 62.0 mm (2.441 in) x W 60.3 mm (2.375 in) x H 60.3 mm (2.375 in)
WEIGHT:	210 grams (7.4 oz.)
COLOUR:	FED-STD-595 Housing black (37038) or grey (36118) Markings white (37875)
INSTALLATION:	Semi ARINC Housing installs using a metal mounting clamp Connector Amphenol 71-570123-12-10 mates with MS3116E12-10S

## MECHANICAL DRAWING

