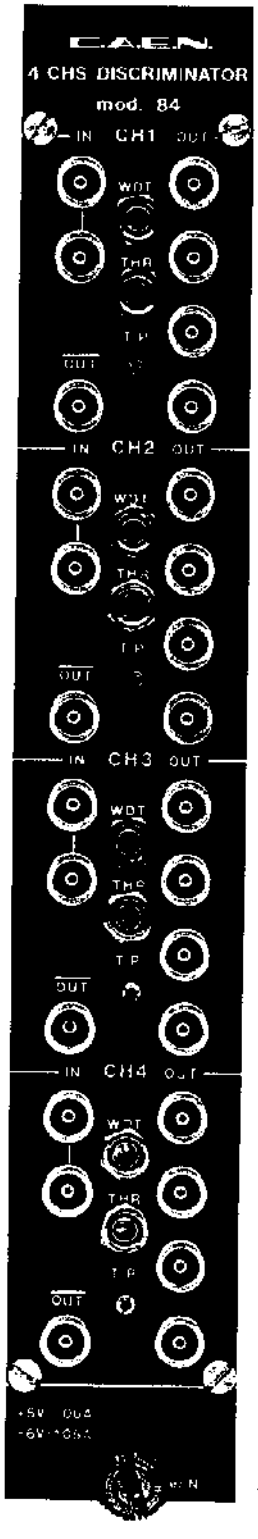
Technical Information Manual

MOD. N 84

FOUR-FOLD FAST DISCRIMINATOR

11th May 1991


CAEN
4 CHS DISCRIMINATOR
mod. 84
IN CH1 OUT
WDT
THR
TP
OUT
IN CH2 OUT
WDT
THR
TP
OUT
IN CH3 OUT
WDT
THR
TP
OUT
IN CH4 OUT
WDT
THR
TP
OUT

CAEN will repair or replace any product within the guarantee period if the Guarantor declares that the product is defective due to workmanship or materials and has not been caused by mishandling, negligence on behalf of the User, accident or any abnormal conditions or operations.

CAEN declines all responsibility for damages or injuries caused by an improper use of the Modules due to negligence on behalf of the User. It is strongly recommended to read thoroughly the CAEN User's Manual before any kind of operation.

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CAEN reserves the right to change partially or entirely the contents of this Manual at any time and without giving any notice.

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DESCRIPTION

Model N 84 is an 4-channel fast discriminator, with std NIM outputs, in a one-unit wide NIM module,that combines low cost with maximum flexibility.

High impedance bridged inputs make it possible to cascade multiple sections (a 50 Ω termination is required on the last unit of the daisy-chain).

On each section both the threshold level and the output pulse width can be adjusted: the selection of the full scale range is made by a single DIP switch on the PCB for the threshold level (total range 20 to 380 mV) and by a DIP-2 switch for the output width (total range 7 to 300 ns). Both parameters can then be continuously adjusted with the front-panel trimmers THR and WDT.

Each section has also a Test Point (TP) to monitor the threshold level on a DC voltmeter.

Five outputs (4 normal, 1 complementary logic) are available per channel.

SPECIFICATIONS (each section)

Input characteristics

Number ..... 2 bridged, high impedance

Threshold ..... continuously adjustable via front- panel trimmer THR over two ranges selected by DIP switch on PCB. Range is 20 to 380 mV.

Output characteristics

Number ..... 4 normal, 1 complementary logic, 50 Ω impedance, std NIM levels.

Rise-Fall Time .... ≤ 1.6 ns

Pulse Width ..... continuously adjustable with front- panel trimmer WDT over three ranges selected by DIP switch on PCB. Range is 7 to 300 ns.

General

Maximum Rate ..... 85 MHz

Double Pulse Resolution ..... 9 ns

Input-Output Delay ..... 16 ns

All connectors are **LEMO 00** type

POWER REQUIREMENTS	**+6V**	**60 mA**
	-6V	**1060 mA**

TEST PROCEDURES

on 1 of 4 identical channels)

Necessary instruments: 100 MHz pulse generator NIM standard output; Oscilloscope Tektronix Model 475A or equivalent; Digital Voltmeter; 36 dB dynamic Attenuator.

Procedures:

1) Check that the voltage threshold available on the tp monitor point on the front panel is varied continuously by the THR front panel trimmer by the d.i.p. switch SW1 on the printed board.

2) Turn trimmers WDT and THR completely anti-clockwise.

3) Feed the IN entry a signal compatible with the input specifications.

4) After having fixed the input width signal by the attenuator, check the presence of a NIM signal std. (16 mA, 50 Ω) at the OUT and $\overline{\text{OUT}}$ outputs, equal in frequency to the input.

5) Controlling the WDT trimmer and the dip switches SW2 (SW3) check that the output pulse width varies continuously in the limits foreseen by the output specifications.

6) Turn the THR trimmer clock-wise until the output signal ends.

7) Check that the input signal amplitude is equal to the voltage threshold ± 5%.

8) Repeat points 4,5,6,7 for the increasing input width signal.