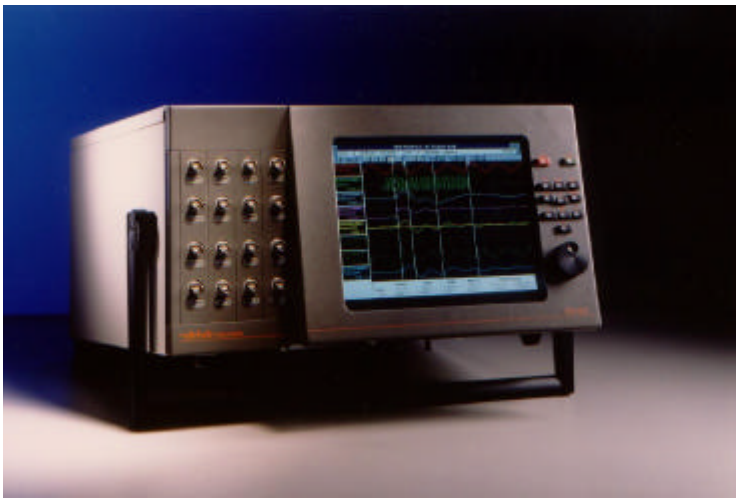

TRA 800

Transient Recorder and Analyzer

- **Pentium CPU** with 256 MB RAM and 40 GB harddisk
- **Built-in 3,5" floppy drive** 1,44 Mb
- **Windows** 95 or 3.11 software environment
- **easy-to-use operation concept –** select between mouse, keyboard and Swiss
- **8, 10 or 12 bit resolution**, up to 50MHz sampling rate
- **various trigger modes:** level, window (in/out), slew rate, time out and reference band
- input amplifiers with 31 hardware ranges from 100mV to 100V f.s. with **overvoltage protection, anti-aliasing filter** and offset regulation
- **modular structure** up to 32 channels with different sampling rates, resolutions and memory depths
- **on-line help function** on all important menu topics

The Transient Recorder and Analyzer TRA 800 sets a new standard in the computer controlled data acquisition with signal analysis.

Ergonomics and comfort in operation were the most important development goals. They are realized by means of a large 10.4”TFT colour display, the Swiss mouse input device and a sophisticated operation concept, in which we implemented many of our customer's ideas.

The user may select between mouse, keyboard and Swiss mouse for his instrument settings. This and the Windows 95 graphics interface provide an easy operation to the computer-oriented user as well as to anyone with a measuring problem, who likes menu-guided dialog boxes and input via Swiss mouse and control wheel.

There is a great choice of different screen presentation modes: display of up to 8 signals as a function of time, X/Y display, scalar and vector functions.

The measuring of the signal values can be done easily with two origin and one cursor line.

The large variety of trigger modes help with an optimized data acquisition, and a choice of many trigger criteria guarantee data reduction. The unique reference trigger mode compares stored signals with the current input signals and starts recording on defined deviation in X or Y.

The new instrument is compatible with our Transient Recorders of the 700 and series – all TRA 700 input modules can be used in a TRA 800 without quality losses. Therefore a large palette of measuring modules with 8, 10 or 12 bit resolution, sampling rate up to 50 Msample/s per channel is available for the new TRA 800 instrument, too.

Anti-aliasing filters in the input modules are state-of-the-art. A special feature are the programmable amplifiers which have double overvoltage protection. GDT surge arresters and super fast fuses are protecting the inputs against overvoltage in a rough industrial environment.

All measuring channels are independent in their time bases and trigger criterias. Dual time base is selected for each channel as desired. Thus every channel can be switched as a separate Transient Recorder. Still the TRA 800 makes time-correlated displays and processing possible.

Besides the analog input there are up to 8 digital channels (TTL) per module available.

The user can directly perform signal analysis thanks to numerous mathematical functions called by menu. External C programs can be linked as USER FUNCTIONS into an automatic measuring and analyzing process.

The TRA 800 is a measuring system ready to use at once without long exercise and preparation time. It has built up a new reference standard in ergonomics, comfort of operation and flexibility and guarantees an all-time optimal adaptation to every measuring task.

Specifications

Mainframe (TRA 800)

Number of channels	1 to 8 independent channels. Up to 32 channels with additional expansion frames.
Operation	menu technique under Windows 95 or Windows 3.11 with control wheel or mouse and keyboard
Interfaces	Centronics par, 2 x RS232
Monitor	internal 10.4" colour LCD display TFT quality with a resolution of 640 x 480, output for an external VGA monitor 1024 x 768
CPU	233 MHz Pentium MMX; 128 MB RAM, 40 GB harddisk
Slots	additional slots to install
Dimensions:	**wxhxd:** 44.4 x 26,2 x 52,2 cm
Weight	22 - 26 kg
Mains connection	selectable 90-132 VAC 47-440 Hz 180-260 VAC 47-440 Hz developed according to IEC380/UE478/VDE806
Power consumption	275 VA typ.

Triggering

External	TTL-Signal
Reference-band-trigger	on-line curve comparison trigger
Channel trigger	independent adjustable for each channel
Level trigger	+ / - level with adjustable hysteresis
Window in/out	window trigger
Slewrate trigger	slewrate trigger
Time - Out	time out trigger
Trigger delay	independent for each channel
-100%...0%	pre trigger
0%...400%	post trigger

Trigger linking

"Link to Main trigger"

OFF =	the channel only triggers himself
OR =	the main trigger is activated by one of the connected channels.
AND par =	the main trigger is activated when all trigger conditions are fulfilled at the same time.
AND sequ =	the main trigger is activated when all trigger conditions one after another has once been fulfilled.

"Trigger source"

LOCAL =	the channel is being started by its own trigger
MAIN =	the channel is being started by the main trigger
LOCAL AND MAIN =	the channel is being started when the own and main trigger are activated at the same time

Operation modes

Single	single recording
Multiblock	registration of several fast events following one another
Auto	automatic recording, display and storage

Modules

Available are modules with either one (single) or two channels (dual). An expansion frame can be extended with single-modules up to 8 and with dual-modules up to 16 channels.

Memory	256 kWord per channel, battery buffered for approx. 30 days, segmentable into blocks 1..258 kWord
Input	differential, possible to switch over to single-ended.
Ranges	100mV..100V in 31 steps
Offset	0..-100%
Input impedance	1 MOhm par. 65 pF; 50 Ohm (110S)
Input coupling	DC, AC, GND
Low pass filter	4- to 6- selectable anti-aliasing filters w ith four pole Bessel characteristics cut off frequencies = 25 MHz, 5 MHz, 500 kHz, 50 kHz, 5 kHz und 500 Hz
Time base	2 quartz controlled time bases, switchable during recording

Choice of measuring modules

Single 50 MHz/8 bit	channels	1
	max. sampling rate	50 MHz
	bandwidth	25 MHz
	resolution	8 bit
	marker	8*
	memory	256 k
	accuracy	0.5 % typ.
Single 50 MHz/10 bit	channels	1
	max. sampling rate	50 MHz
	bandwidth	25 MHz
	resolution	10 bit
	marker	6*
	memory	256 k
	accuracy	0.5 % typ.
Dual 20 MHz/8 bit	channels	2
	max. sampling rate	20 MHz
	bandwidth	5 MHz
	resolution	8 Bit
	marker	none
	memory	2 x 256k
	accuracy	0.6 % typ.
Dual 1 MHz/12 bit	channels	2
	max. sampling rate	1 MHz
	bandwidth	500 kHz
	resolution	12 Bit
	marker	2 x 4*
	memory	2 x 256k
	accuracy	0.5 % typ.
Dual 200 kHz/12 bit	channels	2
	max. sampling rate	200 kHz
	bandwidth	100 kHz
	resolution	12 Bit
	marker	2 x 4*
	memory	2 x 256 k
	accuracy	0.4 % typ