

## PAD 32 Multichannel Preamplifier/Discriminator

### Description:

The PAD 32 is a 32-channel pulse amplifier/discriminator to detect the output signals of 32 CEMs for counting purposes. It is intended to be used near the CEMs and can drive remote counters over fairly long coaxial cables.

The CEMs are operated with negative high voltage at the cathode, the collector plates are on 0 V potential and are directly coupled to the PAD 32 inputs. Cable length is uncritical (up to  $\approx 2$  m), but should be chosen not unnecessarily long and be implemented with  $50 \Omega$  coaxial cable with high shielding in order to avoid noise coupling.

The PAD 32 amplifies the pulses, compares them to a fixed threshold, and generates an output pulse if the threshold is overdriven. The output pulse is predistorted such, that it arrives as LS-TTL-pulse at the remote multichannel counters via 50 m cable.

### Technical Data:

Each channel:

Threshold:  $-(30 \pm 1)$  mV input referred.  
This corresponds to  $\approx 6$  pC at the CEM output or  $0.4 e^-$  at the CEM input with gain =  $10^8$ . Other settings down to  $\approx 0.05 e^-$  are possible.

Dead time:  $(32 \pm 1)$  ns, equivalent to max. theoretical counting rate 30 MHz.

Pulse width:	15 ns min. (pulse and interval) }	After 50 m cable RG 213 and termination with 1 LS-TTL load plus $560 \Omega$ pull-up to +5 V.
Pulse shape:	TTL-compatible, active low }	

Whole instrument:

Mechanical: metal case  $L \times W \times H \approx 250 \times 350 \times 110$  mm<sup>3</sup>

Power: 230 V<sub>~</sub>, 80 W, fan included

Connectors: inputs SMC (front panel)  
outputs BNC (rear panel)

These technical data may be adapted to the customer's needs:

Threshold  
Dead Time  
Pulse shape  
Predistortion

Contact factory for details.