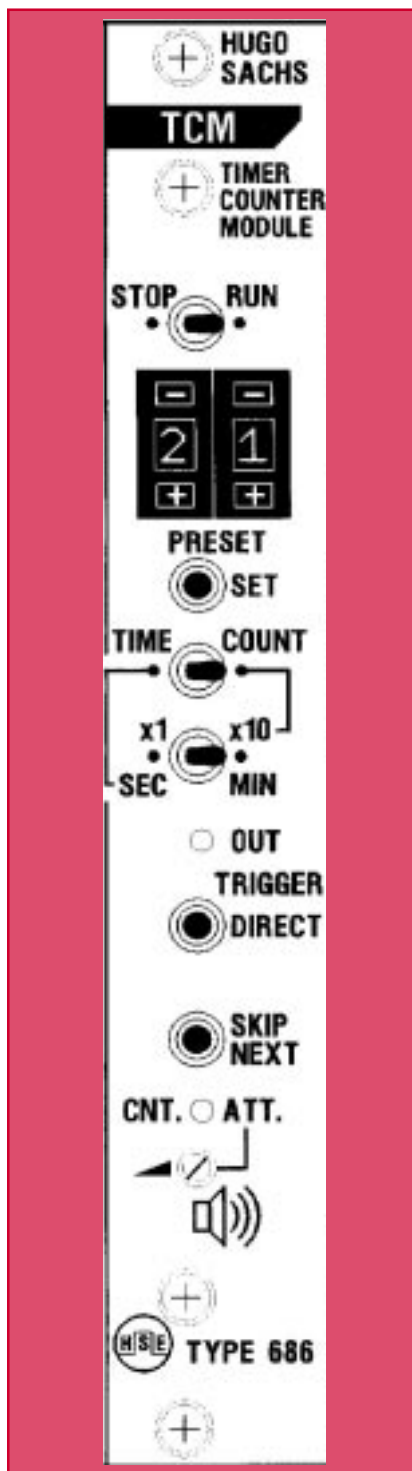


HSE-Harvard Timer Counter Module (TCM)

- Trigger module for sigh breath in isolated lung experiment
- To prevent slow collapse of lung
- Works in combination with VCM Module

The Timer Counter Module was designed to operate in conjunction with the HSE-Harvard Ventilation Control Module VCM used in all HSE-Harvard isolated lung apparatus from mice to rabbits. As a timer or event counter module it generates a signal which triggers the VCM to perform a deep inspiration cycle.

In order to prevent the slow collapse of the lung during quiet respiration, a deep inspiration should be produced every 5 to 20 minutes. This results in an appreciable extension of the lifetime of the preparation. The VCM, see previous page, therefore has a facility for triggering such a deep inspiration by pressing the 'DIRECT' key or at the regular intervals from the HSE-Harvard* Timer Counter Module. Other PLUGSYS modules are also capable of responding to this output signal.



Specifications

Input and Output Trigger Signals	Connections made via jumpers to trigger lines of 96-pin VG connector from internal PLUGSYS system bus
Time Mode	Deep inspiration is produced at predetermined time intervals. Quartz-controlled timer inside TCM runs down from set time to '00' and then resets counter back to selected value; when '00' is reached, VCM is triggered to perform deep inspiration cycle.
Count Mode	Deep inspiration is produced after predetermined number of respiratory cycles of VCM. Respiration cycles are counted down on presetting counter inside TCM; when zero is reached, VCM is triggered to perform deep inspiration cycle and counter automatically resets to preset value
Preset	Time or event presetting is selected on two digit thumbwheel switch (00-99) mounted on front panel; time or count range can be altered with switch SEC/MIN or x1/x10 to select appropriate factor
Warning Function	TCM incorporates warning function which announces next triggering operation; announcement activated when internal timer or counter counts last 10 seconds or respiratory cycles; function is indicated visually on LED and audibly by built-in loudspeaker. Purpose of facility is to remind user that deep inspiration is coming shortly. This can be inhibited by pressing 'SKIP NEXT' key, if desired to avoid interference with any measurement during experiment.
Power Supply	5 V, 350 mA through connector from PLUGSYS bus system
Dimensions, H x W x D	128.7 x 20.2 x 220 mm (5.1 x 0.8 x 8.7 in)

Catalog No.	Product
CGS 8391.71	TCM Timer Counter Module