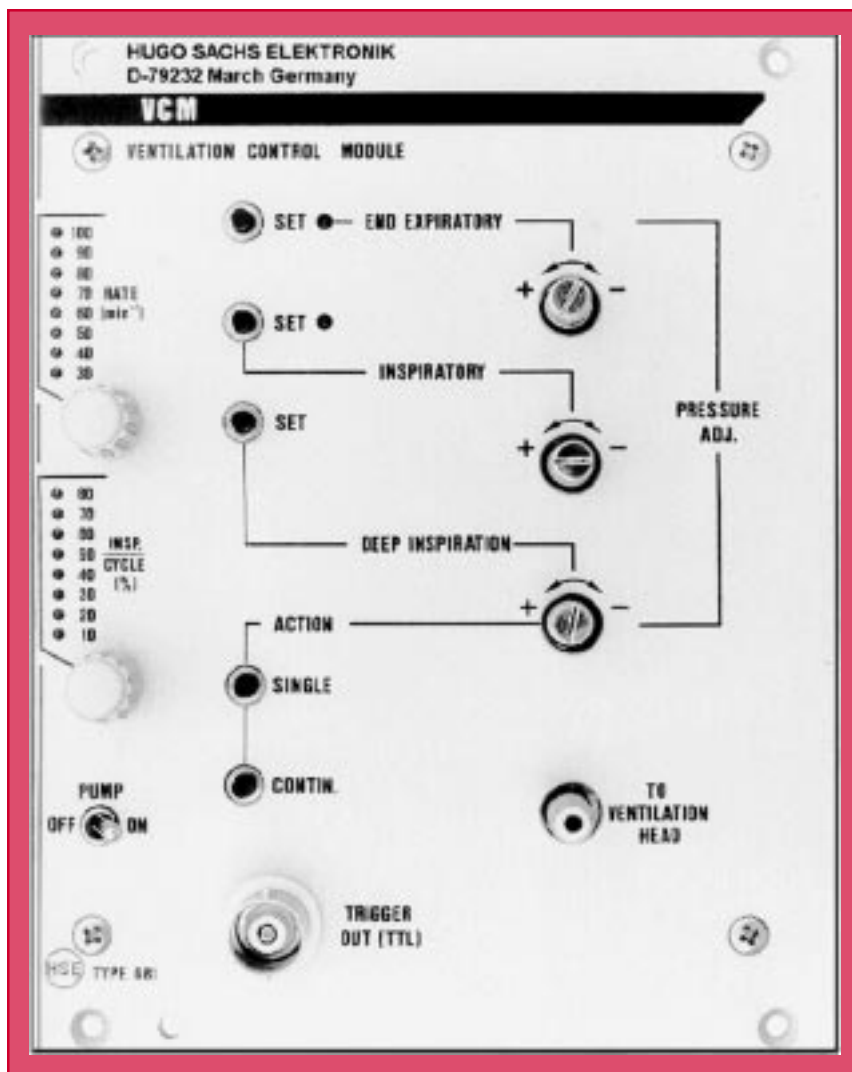


## HSE-Harvard Ventilation Control Module (VCM)



- Ventilator module for isolated lung
- Positive or negative pressure ventilation using a ventilation head or venturi jet nozzle

The HSE-Harvard Ventilation Control Module VCM has been developed especially for producing a negative pressure at a respiratory rhythm as required for operating an isolated perfused rabbits, rats, guinea-pigs, or mouse lung.

The module operates with a positive pressure. The negative pressure required for ventilation is generated by means of a venturi nozzle which is fitted externally. When used with a restrictor nozzle the module can also be employed for positive pressure ventilation during the preparation phase of the lung, a very convenient facility

The VCM module works independently; it requires neither a vacuum nor a compressed air supply. The module consists of an electronic and a pneumatic section. A low-noise pump stores the compressed air in a small reservoir where it is stabilized electronically. The air stream which appears at the outlet connection (TO VENTILATION HEAD) passes through adjustable valves. The air is controlled electronically according to the selected respiration rate (RATE) and the selected inspiration cycle (INSP. CYCLE%). In addition one (or several) deep breaths (DEEP INSPIRATION) can be triggered by pressing a button. The output therefore consists of a rhythmically modulated air stream at a positive pressure. By connecting it to a suitable nozzle a rhythmically modulated negative or positive pressure of the desired magnitude can be produced.

### Specifications

#### Adjustment Ranges:

Ventilation Rate	'RATE': 30, 40, 50, 60, 70, 80, 90, 100 (min <sup>-1</sup> )
Inspiration Time	'INSP. CYCLE': 10, 20, 30, 40, 50, 60, 70, 80 (%)
Airflow at Outlet	0 to 4 l/min (no back pressure)
Internal Operating Pressure	100 to 5 mmHg electronically controlled
Trigger Output (BNC Socket)	[inspiration = low level] / [expiration = high level] TTL level (open collector)
Trigger Inputs/Outputs through Internal Jumpers to PLUGSYS Bus	DEEP INSP. OUT (output TTL level open collector) EXP./INSP. OUT (output TTL level open collector) DEEP INSP.IN (input TTL load resistance 2.2 kOhm)
Power Supply	5 V 0.4 A, 24 V 0.4 A through connector from PLUGSYS bus system
Dimensions, H x W x D	128.7 x 101.6 x 220 mm (1.5 x 4 x 8.7 in)
PLUGSYS Width	5 slot units
Weight	1.8 kg (4 lbs)

Catalog No.	Product
CGS 8388.71	VCM Ventilation Control Module