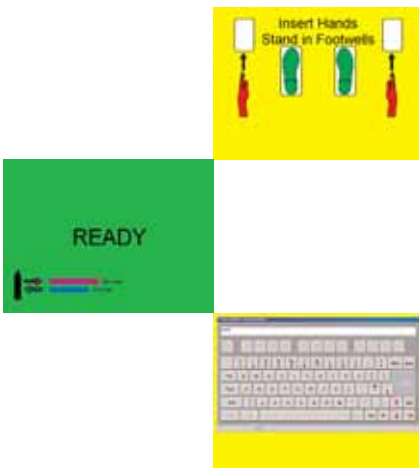


The HFM11 provides fast, thorough, hand and foot monitoring with class leading reliability and ease of use. Now available with both gas sealed and gas flow detectors.

HFM11

Gas flow and gas sealed hand and foot monitor



- Low power fan-less operation
- Long hand detectors for wrist & forearm coverage
- Large touch-screen color LCD display - no keyboard required
- Easy to maintain detector assemblies, no tools required
- Optional frisker probe
- Hex-mesh grills for greater comfort and detector protection
- Automated calibration and checking routines



Optional Frisker

The HFM11 is Thermo Electron Corporation's latest generation high-performance hand and foot monitor. There are two gas versions: the HFM11-GF (gas flow) and the HFM11-SX (gas sealed Xenon). The high-efficiency foot detectors help to reduce monitoring times, the longer hand detectors provide wrist and forearm coverage and there is an optional frisker probe available for additional monitoring. Status, instructions and results are clearly shown on the large color LCD touch-screen, making the monitor especially easy to use.

The HFM11 is also designed with economy and reliability in mind. The low power consumption means there is no need for a cooling fan which might suck in dust and dirt, and there are no moving parts to fail - solid state Flash storage is used instead of a hard disk in the industrial PC controller, and photobeams are used in the positioning sensors instead of microswitches.

The modular 'X-channel' platform, with common controller boards and simple cabling, provides for easy, low cost maintenance. It also provides detector intelligence and powerful controller functionality - such as the automated calibration and source checking routines. The X-channel architecture also allows easy retro-fitting of options such as the frisker probe (not available with gas sealed). Gas flow measurement is now handled electronically by on-screen flow graphs and leak and high/low flow alarms.

Sophisticated voltage scanning software included which will clearly display the optimum voltage in order to minimize cross-talk between alpha and beta channels (gas flow) and discriminate between X radiation and other interfering radiations (gas sealed).



HFM11 Specifications

HFM11-GF			HFM11-SX	
Detectors:	Hand Counters (x4)	Foot Counters (x2)	Hand Counters (x4)	Foot Counters (x2)
Operating voltage:			1600 V	
Sensitive area:	460 cm ² each	570 cm ² each	460 cm ² each	570 cm ² each
Window:	0.9 mg/cm ² aluminized Mylar		5.5 mg/cm ² of Titanium	
Gas supply/fill:	Ar/CH ₄ or Ar/CO ₂ . Flow rate 25 to 50 cm ³ / min.		Xenon and CO ₂	
Efficiencies:	Hand	Foot	Hand	Foot
Alpha: (% of surface emission rate)	²⁴¹ Am 40%	35%		
Beta: (% of surface emission rate)	¹⁴ C 33%	30%	5%	4%
	⁶⁰ Co 45%	42%	18%	18%
	³⁸ Cl 50%	45%	32%	30%
	⁹⁰ Sr/ ⁹⁰ Y 54%	48%		
X-ray: (% of surface emission rate)	¹²⁹ I		7%	5%
Gamma: (Approx. counts/s in a uniform field of 1 μSv/h due to 660 keV photons)	100	200	220	300

Monitor:

Alarm settings:	By the use of large area calibrated sources or by touch-screen entry of calculated efficiencies. All HFMs are factory-tested with reference sources.		
Background update time:	100 second rolling average		
Monitoring time:	Auto time: 1 to 100 seconds		
Control:	Audible and visible alarms occur if a hand or foot is out of position.		
Indications:	Digital screen displays for alpha and beta levels for each hand and foot. Magnitude and type of contamination is displayed (can be suppressed from the set-up menu).		
Audible indication:	Separate indications for 'Out Of Position', 'Clear' and 'Alarm' states, as on previous HFM versions.		
Probability of false alarm:	0.1 to 10 sigma in 0.1 sigma steps		
Probability of detection:	0 to 10 sigma in 0.1 sigma steps		
Self test:	High Voltage, detector response, detector contamination and background level are monitored. Validity check on parameter storage.		
Digital I/O connections:	RS-232, Parallel printer port, Ethernet and USB. Optional: 2nd RS-232, RS-422, RS-485		
Logic outputs:	Available as additional hardware option		
Environmental:	Operational temperature range: 5 °C to 45 °C (41 °F to 113 °F) Humidity: up to 95% at 35 °C (95 °F) (non-condensing)		
Power requirements:	90 to 264 VAC (auto-ranging power supply), 47 to 63 Hz, 85 VA max.		
Dimensions:	Height:	1400 mm (55.1")	1765 mm (69.5") with lid fully open
	Width:	876 mm (34.5")	
	Depth:	825 mm (32.5")	
Weight:	125 kg (275 lb) approx. unpacked. Frisker options 5 kg (11 lb) approx.		

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USA:
5981 Airport Road
Santa Fe, NM 87507
USA
(505) 471 3232
(505) 428 3535 fax

UK:
Bath Road
Beerham, Reading RG7 5PR
England
+44 (0) 118 971 2121
+44 (0) 118 971 2835 fax

World-wide:
Frauenauracher Strasse 96
D 91056 Erlangen
Germany
+49 (0) 9131 909-0
+49 (0) 9131 909-205 fax