



## FH Series "Smart" Marking Head features PC-free operation

Designed to provide a new level of flexibility to OEMs and Systems Integrators, Synrad's FH-Series "Smart" Marking Head features true stand-alone, automated marking of both moving and stationary parts. In Tracking mode, the SmartFH Head can mark products traveling at line speeds up to 250 feet per minute (76 m/min.) - the perfect marking solution for your "on-the-fly" continuous assembly or packaging needs.

In contrast to FH Index and Tracker Marking Heads, which require a dedicated computer to drive each marking head individually, SmartFH Heads are set-up using a desktop or portable laptop computer, a Windows® CE device, or a hand-held terminal. Once mark files are downloaded to SmartFH, the programming device can be disconnected and all serialization, date coding, and I/O automation is controlled by the SmartFH Head on a real-time, stand-alone basis.

SmartFH provides the same level of serviceability as FH Index and Tracker models, and, because mounting and alignment specifications are identical, all FH Series Heads can be interchanged without modifications to mounting hardware. In addition to the FH Series' proven ease of integration, SmartFH provides additional Input/Output capability, as well as a user-accessible, fully isolated power source for powering external I/O devices.

Design SmartFH mark files on your PC using Synrad's WinMark Pro® laser marking software (available for Windows® 98, 2000, XP or NT operating systems). After creation, download mark files to SmartFH through the industry standard RS232 communication interface. Multiple mark files are stored in SmartFH's non-volatile memory so that marking data is not affected by power loss. Because SmartFH is set-up via a standard serial port, no dedicated computer or Fiber Link Controller Card is required. This, coupled with the ability to create mark files using the fully-featured demo (free!) version of WinMark Pro software, means that your "per head" system cost is thousands of dollars lower when compared to FH Index or Tracker systems.

If you're interested in incorporating SmartFH into your next product, Synrad can provide you with the essential components to build a complete laser marking system based on our line of sealed CO<sub>2</sub> lasers ranging from 10 to 125 watts of output power - all at low packaged prices for OEMs. Just add your expertise in product design, sales, and marketing and your new value-added laser marking product is ready to go!



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# FH Series *Smart* Marking Head

## Features

### Stand-Alone Operation

- Control via Handheld Terminal (RS232)
- Multiple File Storage in Head
- Input/Output (I/O) Automation
- Date/Time Code Support
- Serialization
- Serial Port Auto Text
- Encoderless Tracking
- Variable PWM frequency (1-50KHz)

### I/O Capability

- 8 Built-in Inputs
- 4 Built-in Outputs
- Built-in DC Supply for I/O, Parts Sensor/Encoder

### Object Marking

- 1D Bar Codes
- 2D Bar Codes
- Vector Objects
- Stroke Text
- Bitmap Marking

## Marking Specifications

	Focusing Lens Size				
	370mm	200mm	125mm	125mm (HP*)	80mm
Field Size, typical (mm)	198 x 198	110 x 110	74 x 74	66 x 66	27 x 27
Spot Size, $1/e^2$ ( $\mu\text{m}$ )	540	290	180	180	116
Working Distance <sup>1</sup> , typical (mm)	350 $\pm$ 5	190 $\pm$ 3	128 $\pm$ 2	126 $\pm$ 2	74 $\pm$ 1
Depth of Field, typical (mm)	$\pm$ 10	$\pm$ 2.5	$\pm$ 1.5	$\pm$ 1.5	$\pm$ 0.4
Marking Speed <sup>2</sup> (characters / sec, max)	225	225	225	225	225
Dimensions (in): 5.40 x 8.38 x 5.40	Weight: 10 lbs (4.5kg)		Electrical Input: 30 VDC, 3A, 6A in-rush		
Acceptable Operational Ambient Temperature Range: 0 degrees C to 40 degrees C					

<sup>1</sup>For lenses with 19 mm (0.75") high lens mounts. The typical focal length (working distance) is marked on each lens mount since the actual working distance may vary from lens to lens. For this reason, it is important to provide a Z-axis adjustment between the FH Series Marking Head and the marking surface. Consult your marking head's final test report for the actual measured working distance.

<sup>2</sup>Based on a character height of ~3 mm, lens dependent.  
\* 125mm lens for use with lasers 40 watts and higher

Specifications subject to change without notice

## Tracking Mode Requirements

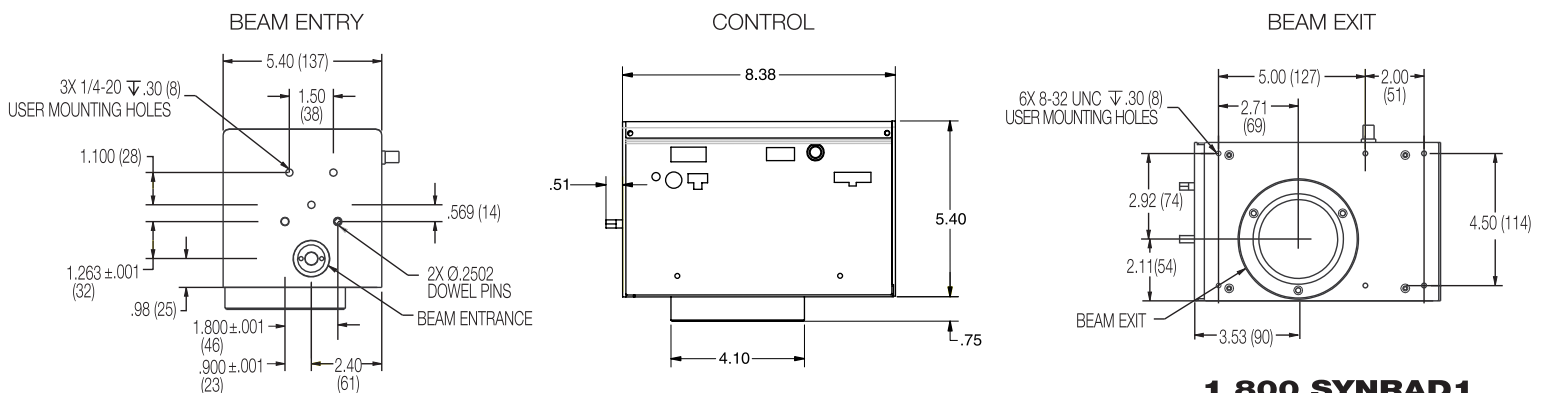
For use in tracking mode, users must supply the following:

- Rotary position encoder
- Part sensor
- DC power supply for encoder and part sensor
- Part movement or conveyor system

### Specifications

Position Encoder	Quadrature or Counts type Open Collector, Open Drain, P or N type
Trigger	Open Collector, Open Drain, P or N type Rising or falling edge selectable

## FH Series "Smart" Marking Head - Outline & Mounting



1.800.SYNRAD1

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