FalseStart II

SPORT TIMING SYSTEMS

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In 1993 the TimeTronics FalseStart I system was the first commercial electronic false start detection system of its kind, and was used successfully since then on many major international athletic meets worldwide.

Besides the main purpose, the verification of the honest start of all athletes, it brings the sound of the starting shot AND the voice of the starter to a loudspeaker which is built into each athlete's starting block.

The actual version, FalseStart II, is a redesigned version which introduced many new interesting features like the recording of the starters 'waiting' time, the printout of extra information like race name, heat #, starters name, etc.

Of course, this system still incorporates the same Built-In-Test feature, a simple and fast menu-operated function to test the complete electronics, sensors and cables.

```
Race name    : 100H
Heat number  : 3
Starter name : JOHN
Ready -> Start: 1,84 sec    ─── Starter
IAAF setting : 0,100 sec          delay
Lane          Signal  Time        time.

  10           000           ─── Reaction
   9           004               times. A '-
   8   OK      215   0,266       ' appears
1  7   FALSE   244  -0,023       in front of
   6   OK      200   0,199       the time in
   5   FALSE   236   0,099       case the
   4   OK      190   0,156       athlete
   3   OK      239   0,202       reacted
   2   OK      244   0,197       before the
   1   OK      256   0,234       starting
                                 shot.
TimeTronics, div of IE
FalseStart II System
Start number: 18
              ─── Number since total reset.
```

Each starting module contains an electronic acceleration sensor, which is continuously measuring the applied force of the athlete a thousand times per second. The starting shot will initiate a verification procedure to check if there was a false start of one or more athletes (reaction time less than 0.100 s). This is done by interpretation of the measured values for a period of 0.2 s before until 0.4 s after the starting shot. This way all possible incorrect alarms for the starter are avoided. It takes of course an intelligent digital processing algorithm to define the exact starting moment from the complex signal which is measured from the blocks. This because during the "set" period the intense force of some athletes can make the blocks vibrate, which has to be digitally filtered out.

TTC210 or TTC211

Judging in a split second whether or not an athlete starts sooner than 100 thousandths of a second after the starting shot (= current IAAF's false start definition) is no longer a question of pure visual judgement! Without the aid of the electronic False Start detection system, this 'naked eye' judgment soon evolves into a gambling game, especially when the starting blocks are not lined up next to each other (e.g. at the start of a 400m race).

The False Start detection system continuously and dynamically measures and analyses changes in the amount of exercised power on the starting blocks. Each thousandth of a second, a real-time analysis is made covering a total period of two tenths of a second before and four tenths of a second after the start. Software within the False Start detection box disposes of a number of menu selections to modify the momentary settings of the systems. Sensitivity of the modules can be preset and is automatically secured on a fair basis for all athletes. Built in test and verification of **all** the configuration's cables, connectors, loudspeakers, amplifiers, etc. to the fullest in just a matter of seconds, by using the built-in test procedure.
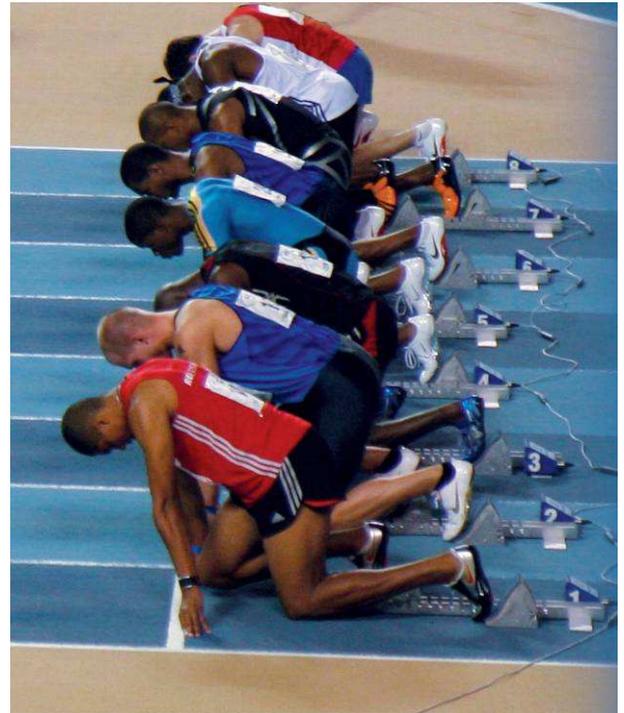
The FalseStart II configuration consists of:
- a lightweight mobile caddy with 2 wheels
- a start detector to be attached onto the barrel of the starting pistol
- 8 or 10 starting modules in one carrying case (for training unit: 2 starting modules).
- a headset through which alarming beeps signal a false start to the starter
- the headset has a built-in microphone for the starter, to give commands.
- 3 different cables on reels (for 100m / 200m / 4x400m races), to connect the starting modules.
- the core of the system which is fully incorporated in the caddy; an electronic FalseStart detection box with built-in amplifier and compact printer.
- build-in rechargeable battery, and separate battery charger.
- **Optional:** FS-graph software on portable PC, to analyse, display and log the athletes starting curves in graphical format.
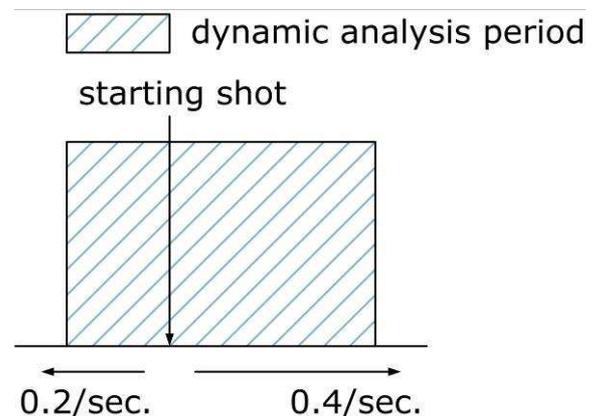
Latest New functions:
- Use programmable number of lanes (6...10)!
- Serial output of False Start results to Athletics MeetManager PC!
- Measurement and print-out of starters delay time!
- Training function with automatic start after random delay.
- Pistol start or start beep by speakers

Sound amplifier and speakers
30 Watt amplifier, powered by built-in, rechargeable battery 12VDC/14Ah: sufficient for 24 hours of use! Each starting module has a force measuring sensor and a built-in 4" loudspeaker of 8W. The module supports the use of all sorts of starting blocks. Velcro strapping underneath for easy and fast fixing and removal on any module of starting block.