

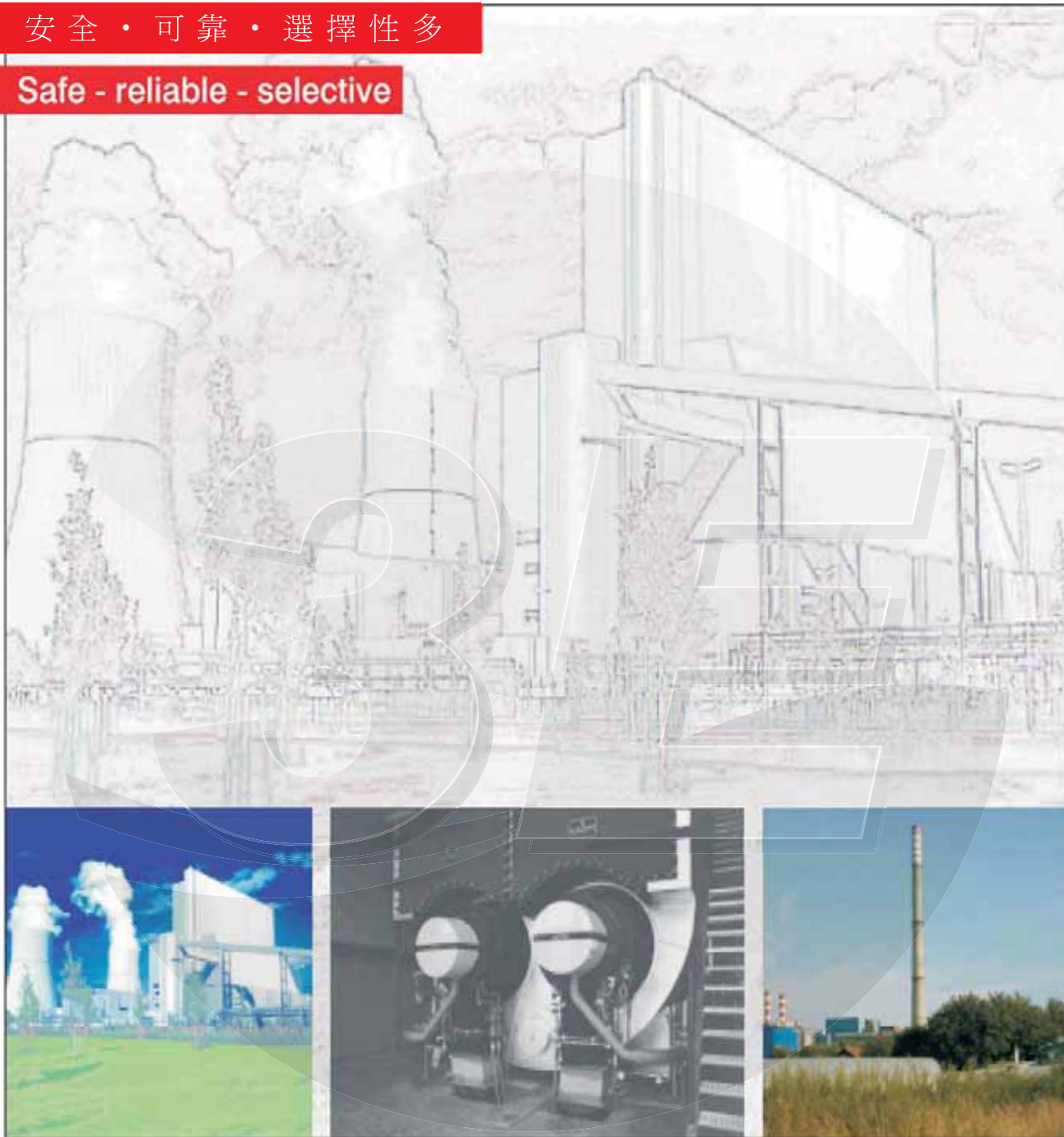
火 焰 偵 測 器  
Flame detection



環保 · 經濟 · 效率  
桀能環保科技  
EVERTOP Enviroment

安全 · 可靠 · 選擇性多

Safe - reliable - selective



可用於單一或多個燃燒機的爐子之火焰監測

For flame detection in single and multiple burne furnace systems

使用場所

Areas of application



油或天然氣(或兩者混用者)  
煤  
木屑  
化學廢料  
其他廢棄物

Oil or gas (also in combination)  
Coal dust  
Wood dust and chips  
Chemical waste  
Other waste products

我們長期經驗與服務  
可解決您的問題！

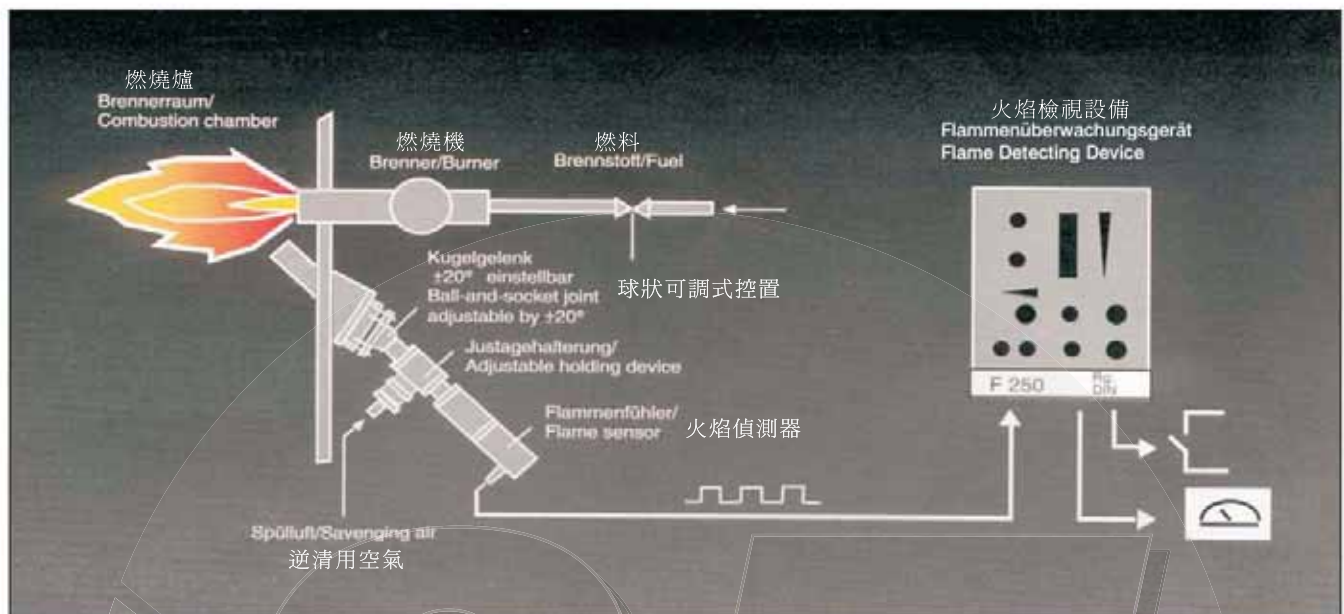
*You will benefit from our  
services and experience!*

用途分析  
專案管理  
試陣  
售後服務  
訓練與顧問

Use analyse  
Project management  
Realisation  
Commissioning  
Service  
Training and Consulting

超過40年的 發生產與工程經驗，是您可靠的選擇。

Over four decades of experience in the development, production and implementation of our systems are at your disposal.



## 安全概念 Safety concept

火焰偵測器的設計是依據下列自我監測原理：

The design of the flame detector units is based on following self-monitoring principle:

◎利用兩個分開並可相互聯結傳送的通道處理訊號。

Signal processing using two separate and mutually addressed transmission channels.

◎連續比較輸出訊號，保證零故障的操作偵測系統。

Continuous comparison of output level for anticoincidence in the fail safe operating detector unit.

## 功能 Functions

每一個“火焰監測器”包括：選擇性高的火焰偵測器與電子顯示單元。

Each of the “flame detector” safety systems consists of the corresponding electronic unit and a freely-selectable flame sensor.

F 200K是例外，它結合了火焰偵測器與電子顯示單元在乙裝置內。

F 200 K is the , the electronic and the flame sensor are in one compact casing.

火焰偵測器將爐子內的火焰跳動幅射光轉成電子訊號(即跳動頻率)，這訊號傳送到已選擇器開關，隨即用數位儲在兩個頻道內，在電子單元中比對參考訊號，這訊號是已選擇的數為頻率。

The flame sensor converts the burner flame's pulsing radiation into an electric signal (pulsation frequency). The signal is fed into a selector switch and then in two separate channels digitized.

Evaluation takes place by comparison with reference pulses in the electronic unit, such that only those

signals, which are within the selected digital frequency transmission range, are further processed.

兩個放大通道在處理訊號是互相獨立的，傳輸繼電器的接點是利用串聯連結的，“火焰啟動”訊號只有在兩邊的通道都感測到火焰時才產生。

Both amplification channels process the signals independently of each other. The transmitting relays

contacts are wired in series. The "Flame ON" signal in conjunction with the relay output is generated

only, when both channels results to a positive detected flame.



# 火焰偵測單元 Flame detector units

## 火焰檢知器 Flame sensors

### 技術規範 Technical data



環保·經濟·效率  
榮能環保科技  
EVERTOP Environment

| 火焰偵測單元<br>Flame detector units            | F 250                | F 150                 | F 200 K                                     |
|-------------------------------------------|----------------------|-----------------------|---------------------------------------------|
| 電源<br>Power supply                        | 24 V DC (+20%, -15%) | 230 V AC (+10%, -15%) | 24 V DC (+20%, -15%)                        |
| 耗電量<br>Power consumption                  | ≤ 8.5 W              | ca. 6 VA              | ≤ 5 W                                       |
| “操作”安全間隔<br>Safety interval “Operation”   | ≤ 1 s                | ≤ 1 s                 | ≤ 1 s                                       |
| 選擇性的(工廠預設)<br>Optionally (factory-preset) | ≤ 3 s                | ≤ 3 s                 | ≤ 3 s                                       |
| 頻率範圍<br>Frequency range                   | 10 / 55...190 Hz     | 10 / 30...90 Hz       | 10 / 30...190 Hz                            |
| 輸出接點<br>Output contact                    | Umschalter<br>SPDT   | Umschalter<br>SPDT    | Umschalter<br>SPDT                          |
| 電流強度輸出<br>Intensity current output        | 4 (0)...20 mA        | 0...20 mA             | 4 (0)...20 mA                               |
| 周界溫度<br>Ambient temperature               | -10°C...+60°C        | -10°C...+60°C         | -10°C...+60°C                               |
| 保護等級<br>Protection class                  | IP 20                | IP 20                 | IP 65                                       |
| 尺寸<br>Dimensions                          | 3 HE / 14 TE         | 3 HE / 7 TE           | zylindrisches Gehäuse<br>cylindrical casing |

#### 火焰檢知器與複合式火焰偵測器 F 200 K Flame sensors & Compact Flame Detector F 200 K

| 火焰檢知器等級<br>Flame sensor class | 頻率範圍<br>Spectral range | 保護等級<br>Protection class |                                                                                                                                      |
|-------------------------------|------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| FFS 05-1 & FFS 05-1 Ex        | 850 ... 1200 nm        | IP 65                    | 所有光電或火焰檢知器，<br>FFS 05及FFS 06可用在任何監測單元<br>All optical flame sensors type<br>FFS 05 and FFS 06 can be used<br>with any detecting unit. |
| FFS 05, FFS 05 Ex & F 200 K   | 1200 ... 2800 nm       | IP 65                    |                                                                                                                                      |
| FFS 06                        | 1200 ... 2800 nm       | IP 54                    |                                                                                                                                      |
| FFS 05 UV-1, FFS 05 UV-1 Ex,  | 260 ... 400 nm         | IP 65                    |                                                                                                                                      |
| FFS 06 UV-1, F 200 K UV-1     | 260 ... 400 nm         | IP 65                    |                                                                                                                                      |
| FFS 05 UV-2, FFS 05 UV-2 Ex   | 210 ... 380 nm         | IP 65                    |                                                                                                                                      |
| F 200 K UV-2                  | 210 ... 380 nm         | IP 65                    |                                                                                                                                      |

#### 其他配件 Available accessories

|                           |                                          |
|---------------------------|------------------------------------------|
| 火焰偵測單元 F250               | Flame detecting unit F 250               |
| 電源供應器 FN01 (230VAC)       | Power supply FN 01 (for 230 V AC)        |
| 模組固定架 (20TE, 42TE 及 84TE) | Module carriers (20 TE, 42 TE and 84 TE) |
| 控制盤外殼 (16TE 及 20TE)       | Control panel casings (16 TE and 20 TE)  |
| 壁掛式外殼 (20TE)              | Wall-mounted casing (20 TE)              |

|               |                                                |
|---------------|------------------------------------------------|
| 火焰偵測單元 F150   | Flame detecting unit F 150                     |
| 插卡式固定架 SKT 16 | Plug-in cards carrier SKT 16 for rail mounting |
| 控制盤外殼 (12TE)  | Control panel casing (12 TE)                   |
| 壁掛式外殼 (12TE)  | Wall-mounted casing (12 TE)                    |

|                       |                                                         |
|-----------------------|---------------------------------------------------------|
| 可調式火焰檢知器固定裝置          | Adjustable mountings for flame sensors                  |
| Fs19 沒有球狀拖座法蘭         | FS 19 without ball and socket flange                    |
| Fs20 有球狀拖座法蘭          | FS 20 with ball and socket flange                       |
| Fs36 可調節式、可拆卸式，含冷卻風外殼 | FS 36 adjustable, demountable, with air-cooled casing   |
| Fs41 有球及拖座法蘭及冷卻風外殼    | FS 41 with ball and socket flange and air-cooled casing |

|                                               |                                                                                                              |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 連接盒 Junction boxes                            |                                                                                                              |
| FG21 (保護等級 IP65) 用在一只火焰檢知器及插頭                 | FG 21 (protection class IP 65) for one flame sensor with plug                                                |
| FG25 (保護等級 IP65) 可用作兩個火焰檢知器及連接到火焰偵測單元，可由外部啟動。 | FG 25 (protection class IP 65) for two flame sensors, for connection to a flame detecting unit, externally s |

**EVERTOP** 昌傑企業有限公司  
EVERTOP Engineering & Trading CO., LTD.

413 台中縣霧峰鄉大同路7號 E-mail: sales@evertop-tw.com.tw  
No.7, Datong Rd., Wufong Township, Taichung County 413, Taiwan R.O.C.  
台中 Tel: +886-4-23308897 Fax: +886-4-23306696  
高雄 Tel: +886-7-2245823 Fax: +886-7-2252291



LAMTEC Maß- und Regeltechnik  
für Feuerungen GmbH & Co KG  
Immersstraße 5  
D-49190 Wulsdorf  
Telefon: (+49) 06227 / 6062-0  
Telefax: (+49) 06227 / 6062-157  
Internet: <http://www.lamtec.de>  
E-mail: [info@lamtec.de](mailto:info@lamtec.de)

LAMTEC Leipzig GmbH & Co KG

Schillerstraße 55  
D-41479 Lengen  
Telefon: (+49) 0341 / 865294-00  
Telefax: (+49) 0341 / 865294-10

Druckschicht AG  
Darmstadt Flammmanufaktur  
D-61266 Frankfurt  
Printed in Germany

F 250



F 150



F 200 K



F 250

光電式火焰檢測設備可用在單一或多個燃燒器的爐子，選擇性高。

Optical flame detecting of single or multiple burner furnace systems for high selectivity requirements

—外部強度開關(最小/最大)可用於紅外線(IR)火焰檢知器FFS 05及FFS 06。

External intensity switch (min./max.) for IR flame sensor FFS 05 and FFS 06

—由外部切換兩只訊號頻率範圍(10/55...190Hz)，每只可有3階段。

External switching of two signal frequency throughput ranges (10/55...190 Hz), each with 3-level

range restriction for different fuel types

—預設啟動時間(1...3s)及強制啟動(0...100%)。

Preset start-up time (1...3 s) and start-up suppression (0...100%) for high

F 150

光電式火焰檢測設備，可用在單一或多個燃燒器的爐子，選擇性高。

Optical flame detecting of single and multiple burner furnace systems for high selectivity is not required

—強度開關(4階段)可用於FFS 05及FFS 06。

Intensity switch (4 levels) for IR flame sensors FFS 05 and FFS 06, switchable on the unit

—兩只訊號頻率範圍(15/30...90Hz)。

Two signal frequency throughput ranges (15/30...90 Hz) switchable on the unit

F 200 K

光電式火焰檢知設備(整合火焰檢知器及切換放大器)，可用在單一或多個燃燒器的爐子，選擇性高。

Optical flame (Compact case with integrated flame sensor and switching amplifier) for single or multiple burner furnace systems without high selectivity requirements

—有兩只頻率訊號(10/30...190Hz)可切換。

Two signal frequency throughput ranges (10/30...190 Hz) switchable on the unit

—多階開關可切換強度，額外可增加1個或2個外部靈敏度切換。

Multiple step switch for intensity switching, optionally with extern switch over of one of two sensitivity

可使用任何場所及用途

The instrumentation series for all applications

TÜV 依DIN EN230及DIN En298測試認證合格，可使用在任何燃油或燃氣的爐子操作。  
 符合TRD411. 412. 413及414 (燃油、燃氣、煤炭、木材)的相關標準。

Prototype tested by TÜV Bavaria in accordance with DIN EN 230 and DIN EN 298 for oil-fired and gas-fired operation respectively.

Approved for continuous operation without capacity restriction and 72-hour operation in accordance with TRD 604. Complies with the standards and regulations in accordance with TRD 411, 412, 413 and 414 (oil, gas, coal, wood).



Registriernummern  
 Registration numbers

DIN-CERTO-Nr.:  
 DIN-CERTO no.:

DIN-DVGW-Nr.:  
 DIN-DVGW no.:

Produkt-Ident-Nr.:  
 Product-ID no.:

**F 250**

5F060/99

NG-2530AP1025

CE-0085AQ0813

**F 150**

5F101/01

NG-2530AP0567

CE-0085AR0290

**F 200 K**

in Vorbereitung / in preparation