

2005 thermal regulations

The main aim of the 2005 thermal regulations is to **reduce power consumption by 40 %** by the year 2020. To achieve this aim, **it is necessary to test** air flow, potential leaks, insulation and facilities: in short, all elements likely to cause energy losses.

Formerly, with the 2000 thermal regulations, specific features of certain non-residential or industrial buildings were not taken into account. **Today**, this distinction is being made in order to **better assess the necessary improvements** for each case.

For example, as well as **significant changes** concerning ventilation in the residential sector, lighting is now also being assessed.

The requirements concerning certain facilities and materials have also been upgraded. As early as the design phase, significant changes have been made concerning **heat generation and distribution**.

Concerning ventilation...

Today, with a view to **saving power** and **increasing comfort**, buildings are waterproof and renewal of air is mainly performed via **mechanical ventilation systems**. Testing of the design, installation and implementation of this controlled mechanical ventilation must **comply with regulations** to eliminate accident risks. Poorly designed or installed controlled mechanical ventilation can contribute to the pollution of interior air rather than reducing it, hence the **necessity of regular testing**.

Summertime comfort to limit the use of air-conditioning systems

Due to climate change and the increased frequency of heatwaves, summertime comfort is now taken into account when new buildings are being constructed. **The regulations on this aspect are expected to be strengthened**, especially for existing equipment. The concept of summertime comfort requires a closer look at the issues of **compatibility of thermal and acoustic systems**, as well as at the **quality of air in buildings**, especially during pollution peaks.

In order to reduce cooling requirements, **power-consuming equipment** in buildings **will have to be optimised** with a view to reducing internal heating.

Another major development will be the **effectiveness** of air-conditioning and cooling equipment, which influences consumption and must be improved in terms of power to achieve **a balance between the environment, health and comfort**.

Effective and easy to use, Chauvin Arnoux[®] measurement instruments have been developed to enable you to make the necessary measurements for compliance with thermal regulations and to validate all your installations in a matter of seconds.

MEASURING THE ENVIRONMENT

Air-conditioning, ventilation, noise, lighting, humidity and pollution are all part of our daily environment. In order to minimise their detrimental impact, these aspects of our environment are subject to regulations that are constantly upgraded.

To comply with these regulations, it is necessary to measure the corresponding systems, using measurements called physical measurements.

Handling measurement instruments, interpreting results (charts, diagrams, graphs, etc.): **environmental measurement is now an integral part of the work performed by electricians, heating and air-conditioning specialists...** Since all these areas require complex installations, professional specialists are most suited to work on such systems.

To maintain installations and test environmental parameters when new buildings are being erected, **all necessary measurements** can be made **simply and quickly** with **our comprehensive range** of Chauvin Arnoux measurement instruments, for all applications.



Immediate mandatory temperature testing at each stage of the **cold chain**



Checking the operation of your **air-conditioning** and **ventilation** system



Preventive maintenance of all types of installations
(Industry, hospitals, etc.)



For **industry**, all measurements for work environment testing (noise pollution, carbon monoxide detection, lighting, etc.)



Testing of air quality and atmospheric humidity, which are regulated for improved conservation of pieces on exhibit in **museums**.



Testing the preservation of **food products** (superstores, etc.)



Testing all parameters to optimise **storage** (temperature, hygrometry, etc.)



Optimising the quality of **transport** (vehicles, loads, etc.)



Testing comfort parameters in a **restaurant**

FROM INDUSTRIAL...

THERMOGRAPHY

C.A 1886 + C.A 1888

- Protected multidirectional screen
- Image resolution: 160x120 or 384x288 pixels (C.A 1888)
- Mix of real image and infrared image from 0 to 100 % (C.A 1886 and C.A 1888)
- Spatial resolution up to 1.3 mrad
- Parameterization of emissivity, environmental temperature, distance and humidity
- Adjustable alarms / Isotherm function
- Cursor for automatic Max/Min temperature detection & 3 manual cursors
- Available with telephoto lens, wide-angle lens and/or high-temperature lens
- Storage capacity of 1,000 radiometric images organized in 250 folders with backup on SD card on the C.A 1886 and C.A 1888 models



Raycam® Report

- Precise analysis of thermograms
- Creation of customized reports

CO DETECTOR



C.A 895

> Buzzer to indicate any risk

CO detector :

- 0 to 1,000 ppm,
± 5 % + 5 ppm

THERMO-ANEMOMETERS



C.A 822

Rotating vane thermo-anemometer:

- 0.4 m/s to 30 m/s,
± 3 % full scale
- -20 °C to +60 °C, ± 0.5 °C

C.A 1224

> Measurement on the outputs of heating and air-conditioning installations

Vane thermo-anemometer with dual display

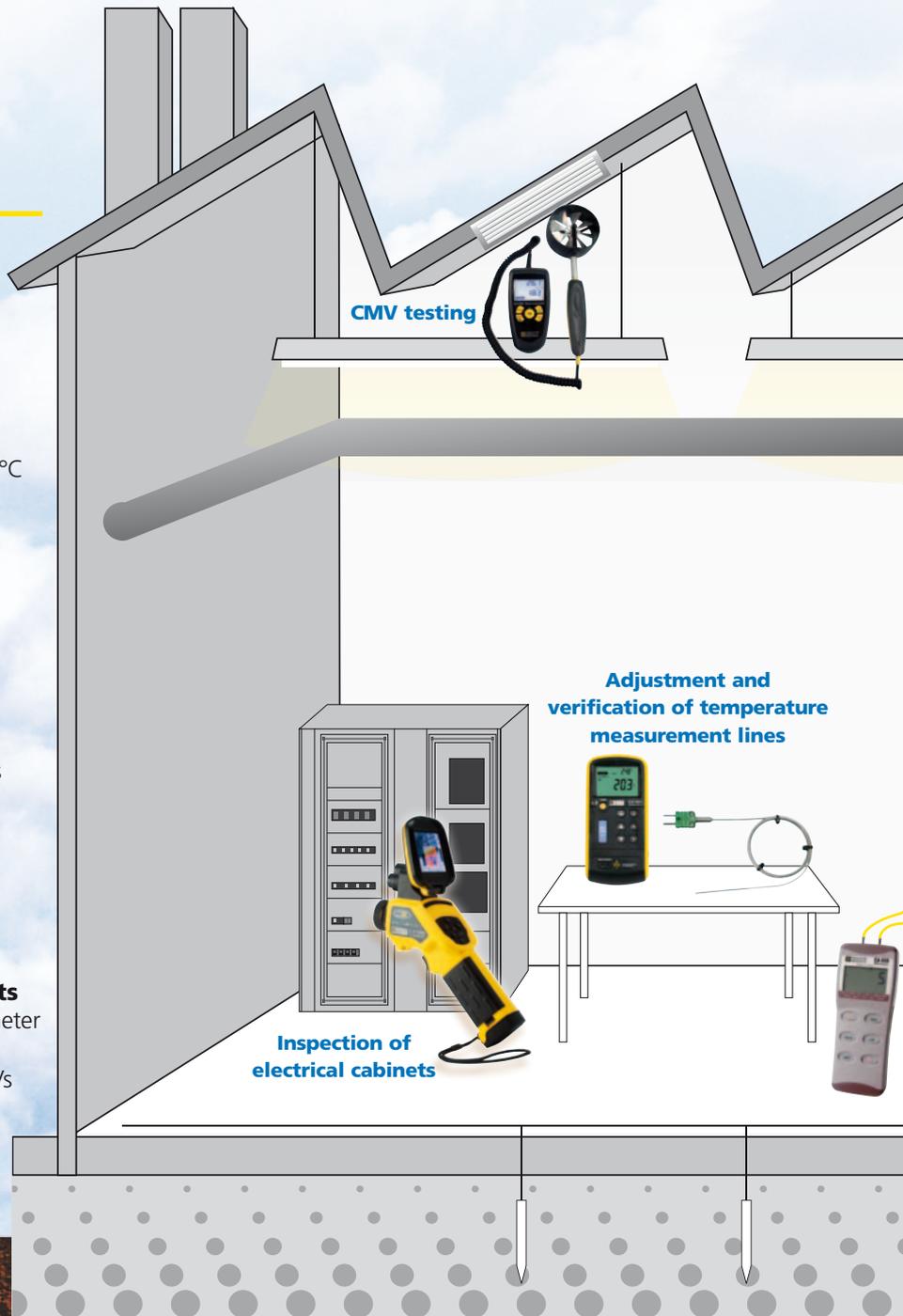
- Speed: 0.25 m/s to 3 m/s and 3.1 m/s to 35 m/s
- Temperature: -20 °C to +80 °C
- Flow: 0 to 99,999 m³/h

C.A 1226

> Measurement in ducts

Hot-wire thermo-anemometer with dual display

- Speed: 0.15 m/s to 3 m/s and 3.1 m/s to 30 m/s
- Temperature: -20 °C to +80 °C
- Flow: 0 to 99,999 m³/h

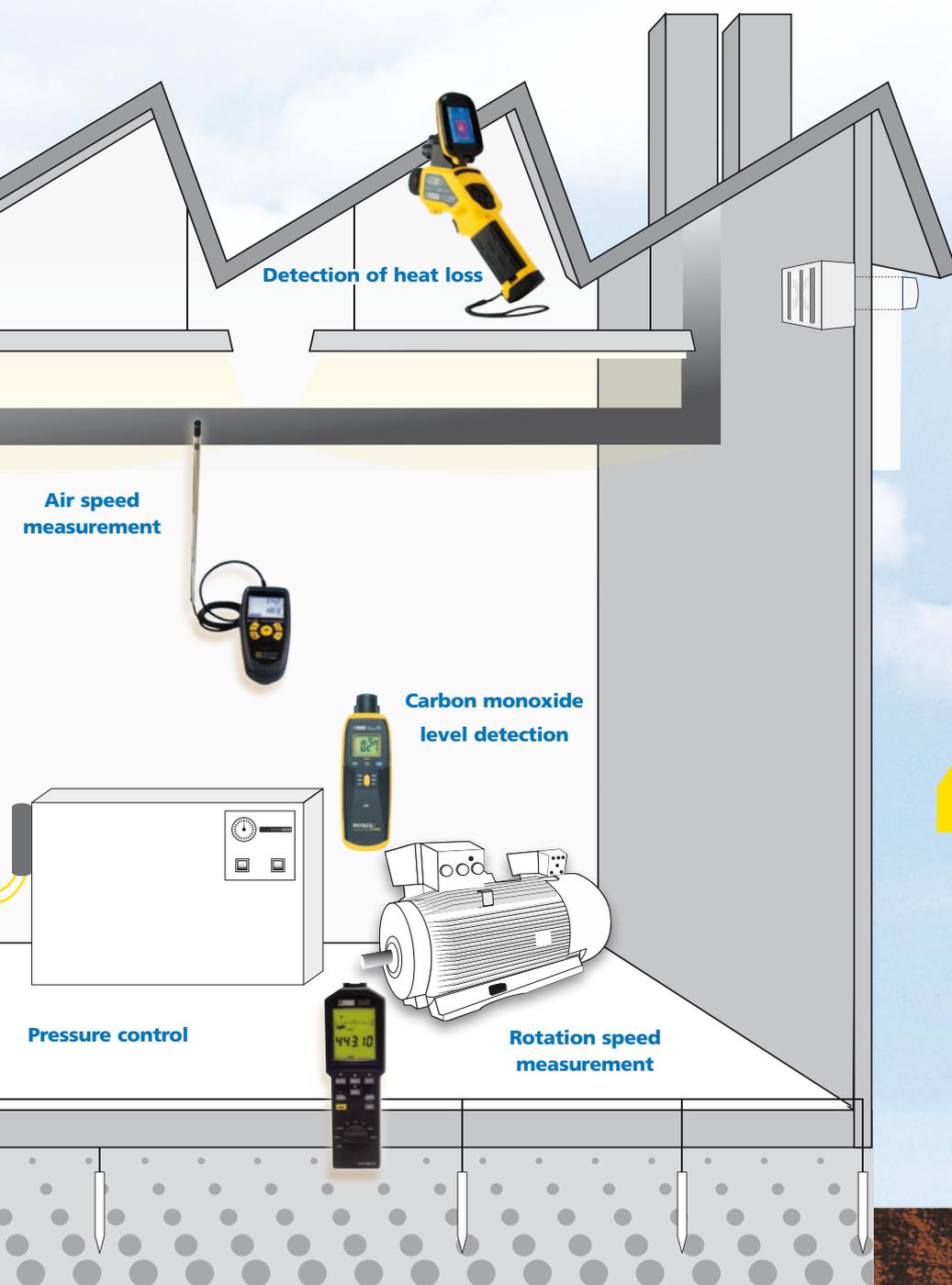


A single tool for comprehensive verification: Measurement of temperature, speed, flow, hygrometry and pressure



C.A. 1052

- > Recording up to 8,000 points
- > Data processing software supplied
- Hot-wire air speed: 0.15 to 30 m/s ± 3%R + 0.03 m/s
- Rotating-vane air speed 0.25 to 35 m/s ± 3%R + 0.1 m/s
- Ambient temperature: -20 °C to +80 °C
- Flow rate: 0 to 99,000 m³/h ± 3%R ± 0.03 x duct area (cm²)
- Hygrometry: 3 to 98% RH ± 1%R + 1.5% RH
- K-thermocouple temperature: -200 °C to +1,300 °C ± 0.4%R + 0.5 °C
- Pressure: 0 to 1,000 mmH₂O ± 0.2%R + 1 mmH₂O



TACHOMETERS



C.A. 1725

- Industrial tachometer
- Measure with and without contact: 6 rpm to 99,999 rpm



C.A. 1727

- Industrial tachometer
- Measure with and without contact: 6 rpm to 99,999 rpm
 - Measurements: 0 to 99,999 events
 - Memory: 4,000 points
 - TACHOGRAPH software for data recording and analysis

CALIBRATORS

C.A. 1631

- > Voltage/current process-signal calibrator
- Measures/simulates voltage
 - Range: 0 to 20 V
Accuracy +/- 0.02 %
 - Measures/simulates mA
 - Range: 0 to 24 mA, accuracy 0.015 %



C.A. 1621

- > Thermocouple-probe temperature calibrator
- Temperature measurement and simulation:
- Range: -250 to 1800°C
 - Millivolt measurement and simulation
 - Range: -10 to +100 mV
 - J, K, T, E, R, S, B & N thermocouples

C.A. 1623

- > Resistance temperature-probe calibrator
- Temperature measurement and simulation
- Range: -200 to 630°C
 - Range: 0 to 3200 Ω
 - Resistance Pt10, Pt50, Pt100, Pt200, Pt500, Pt1000, Pt100(JIS)

MANOMETERS



C.A. 850

- > Special for heating
- Digital manometer, high pressure:
- -6.89 bar to +6.89 bar, 0.3 % full scale



C.A. 852

- > Special for environmental engineering
- Digital manometer, low pressure:
- -138 mbar to +138 mbar, 0.3 % full scale

...TO DOMESTIC APPLICATIONS

THERMOGRAPHY

C.A 1879

- Large LCD screen
- 1,000 images on SD card
- Real and infrared images with the Merge function
- Min./Max.
- Measurements from as close as 50 cm
- Emissivity adjustable
- Text and/or voice comments



DiaCAm Report software, from image analysis to report creation

THERMOMETERS

C.A 876

> Infrared measurements and by contact

Infrared thermometer:

- D/Ø: 10/1
- Emissivity: 0.1 to 1
- K-type thermocouple
- -40°C to +1,350°C, ± 1% ± 1°C



C.A 865

> Contact measurements

- Pt 100 sensor input
- -50°C to +200 °C, ± 0.5 °C

C.A 863

> Contact measurements

- 2 K-type thermocouple inputs
- -50°C to 1,300°C, ± 0.1% + 1°C



C.A 861

> Contact measurements

- 1 K-type thermocouple input
- -40°C to +1,350°C, ± 0.1% + 1°C

LIGHTMETERS

C.A 811

Lightmeter with remote controlled probe:

- 0 to 20,000 lux, ± 3% + 10 cts (incandescent lamp)



C.A 813

Lightmeter with remote controlled probe:

- 0 to 200,000 lux, ± 3% + 10 cts (incandescent lamp)



SOUND-LEVEL METERS

C.A 832

Digital sound-level meter:

- 35 dB to 130 dB, ± 2 dB



C.A 834

Recording sound-level meter:

- 30 dB to 130 dB, ± 1.5 dB
- Recording of up to 32,000 values



Data processing software





C.A 879

Infrared thermometer:

- D/Ø: 12/1
- -50°C to +550°C, ± 1.5 % ± 2°C
- Emissivity: 0.95



C.A 1864

> **Adjustable emissivity**

- Infrared thermometer:
- D/Ø: 30/1
 - +50°C to +1,000°C, ± 1.5 % ± 2°C
 - Emissivity: 0.1 to 1



TK 2000 IP65

Contact thermometer:

- 1 K-type thermocouple input
- -50°C to +1,000°C, ± 1.5 % + 0.5°C



C.A 871

Infrared thermometer:

- D/Ø: 8/1
- -50°C to +538°C, ± 2.5 % ± 2°C
- Emissivity: 0.95



C.A 1866

> **High distance/spot ratio for greater accuracy**

> **Adjustable emissivity**

Thermomètre I.R. :

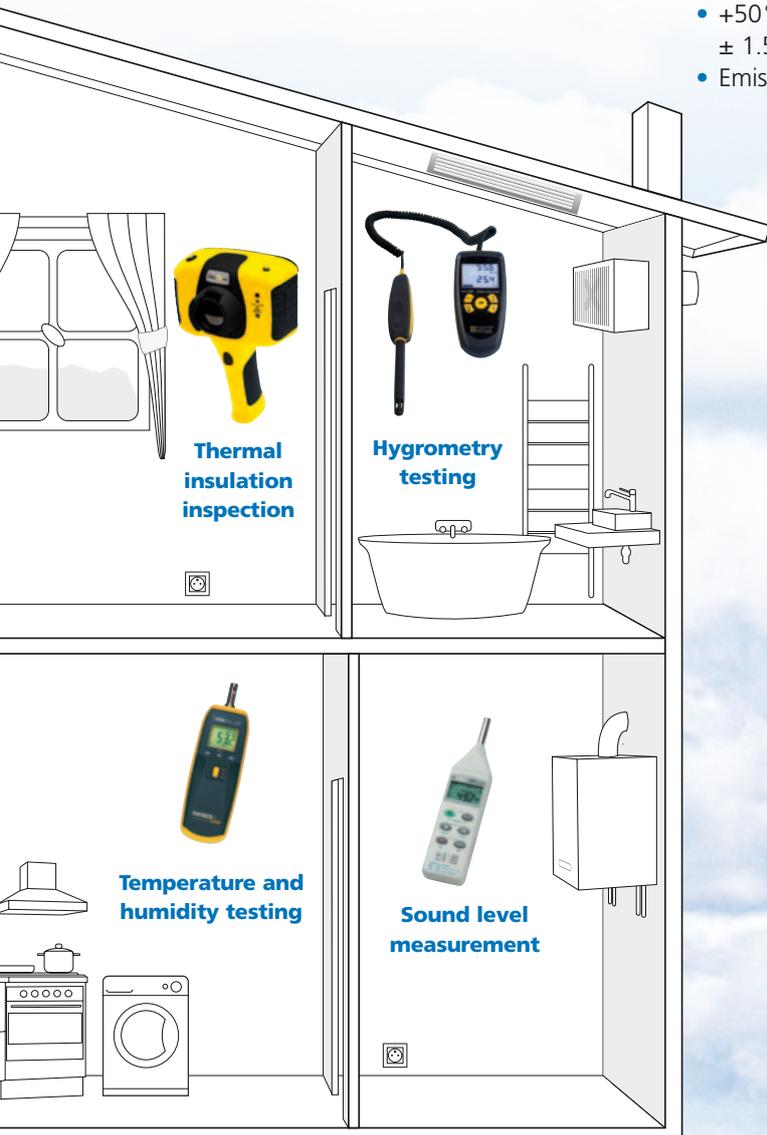
- Infrared thermometer:
- D/Ø: 50/1
 - +50°C to +1,000°C, ± 1.5 % ± 2°C
 - Emissivity: 0.1 to 1



TK 2002 IP65

Contact thermometer:

- 2 K-type thermocouple inputs
- -50°C to +1,000°C, ± 1.5 % + 0.5°C



THERMO-HYGROMETERS



C.A 1244

> **Remote-controlled probe**
Thermo-hygrometer with dual display:

- 5 % to 95 %RH ± 1.8 %RH
- -20 °C to +70 °C, ± 0.4 % R + 0.3 °C
- Dewpoint temperature from -20 °Ctd to +70 °Ctd



C.A 847

Material humidity indicator:

- 6 % to 100 % humidity



C.A 846

Thermo-hygrometer:

- 0 to 100 %RH, ± 7.5 %RH
- -20 °C to +60 °C, ± 0.5 °C

Main accessories



Please contact us for details concerning these accessories.

References for ordering

Tachometer	C.A 1725	P01174810
	C.A 1727	P01174830
Lightmeter	C.A 811	P01172201Z
	C.A 813	P01172401Z
Thermo-anemometer	C.A 822	P01173102
	C.A 1224	P01173113
	C.A 1226	P01173114
Sound-level meter	C.A 832	P01185501Z
	C.A 834	P01185502
Thermo-hygrometer	C.A 846	P01156301Z
	C.A 1244	P01156310
Material humidity indicator	C.A 847	P01156302Z
Manometer	C.A 850	P01184101
	C.A 852	P01184102
Multifunction	C.A 1052	P01175020
Thermographic camera	C.A 1879	P01651250+86+88
Carbon monoxide detector	C.A 895	P01651001Z

Contact thermometer	C.A 861	P01650101Z
	C.A 863	P01650201Z
	C.A 865	P01650301Z
	TK 2000	P01653100
	TK 2002	P01653110
No-contact thermometer	C.A 871	P01651302Z
	C.A 876	P01651403Z
	C.A 879	P01651805Z
	C.A 1864	P01651813
	C.A 1866	P01651814

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