

# Smart Dupline® CO<sub>2</sub>, Temperature and Humidity Sensors w. RGB LED Type SHSUXXXL

CARLO GAVAZZI



- Bus-powered CO<sub>2</sub>, temperature and humidity sensors
- Wall mounting
- CO<sub>2</sub> measuring range: 0 to 2000 ppm
- Temperature measuring range: -20 to 50 °C
- Humidity measuring range: 0 to 100 %RH
- "Traffic light LED indication" for CO<sub>2</sub> level
- Low current consumption
- Easy installation
- Smart Dupline® protocol

## Product Description

The SHSUXXXL line are bus-powered room sensors for wall-mounting. They are available in different combinations of CO<sub>2</sub>, temperature and relative humidity. The sensors have a "traffic light" LED which is used to indicate the CO<sub>2</sub> level in green, amber or red colour. The only connection needed for the

sensor is the Dupline® 2-wire cable. Several sensors can be multi-dropped via the same Dupline® 2-wire bus, thereby simplifying the wiring to the controller significantly. The address assignment and definition of CO<sub>2</sub> threshold levels are performed over the bus by using the SBWEB/SHWEB PC-based programming tool.

## Ordering Key

SH SU CO T H L

Smart Dupline® \_\_\_\_\_  
Sensor \_\_\_\_\_  
CO<sub>2</sub> \_\_\_\_\_  
Temperature \_\_\_\_\_  
Humidity \_\_\_\_\_  
LED 3-colour indication \_\_\_\_\_

## Type Selection

| Module type                              | Indication | Supply: Bus-powered |
|------------------------------------------|------------|---------------------|
| CO <sub>2</sub> + Temperature            | RGB LED    | SHSUCOTL            |
| CO <sub>2</sub> + Temperature + Humidity | RGB LED    | SHSUCOTHL           |

## Supply Specifications

|                |                      |
|----------------|----------------------|
| Power Supply   | Supplied by Dupline® |
| Power on delay | ≤ 3 s                |

## Dupline® Specifications

|                          |       |
|--------------------------|-------|
| Voltage                  | 8.2 V |
| Maximum Dupline® voltage | 10 V  |
| Minimum Dupline® voltage | 5.5 V |
| Maximum Dupline® current |       |
| SHSUCOTL                 | 10 mA |
| SHSUCOTHL                | 10 mA |

## RGB LED

By means of the SBWEB/SHWEB configuration tool it is possible to set the CO<sub>2</sub> thresholds (green to yellow and yellow to red) to automatically light the LED in green, yellow or red colour depending on CO<sub>2</sub> level.

## Input specifications

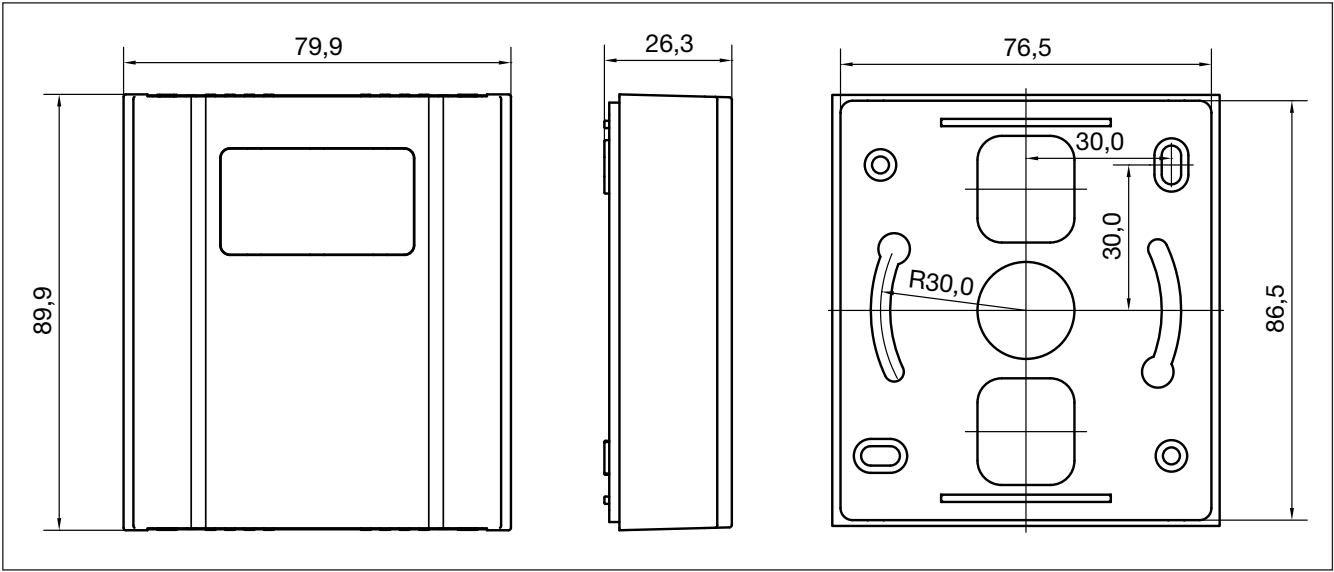
|                                |                                           |
|--------------------------------|-------------------------------------------|
| <b>CO<sub>2</sub></b>          |                                           |
| Measurement principle          | Non-Dispersive Infrared Technology (NDIR) |
| Sensing element                | E+E Dual Source Infrared System           |
| Signal range                   | 0 to 2000 ppm                             |
| Accuracy (@ 25°C and 1013mbar) | < ± (50ppm +2% of measuring value)        |
| Response time                  | Typ 300 s                                 |
| Temperature dependence         | Typ. 2ppm CO <sub>2</sub> /°C (0...50°)   |
| Long term stability            | Typ. 20ppm / year                         |
| <b>Temperature</b>             |                                           |
| Signal range                   | -20 to 50 °C                              |
| Inaccuracy                     | +/-0,5°C                                  |
| Sample rate                    | 5 s                                       |
| <b>Humidity</b>                |                                           |
| Signal range                   | 0 to 100 %RH                              |
| Inaccuracy                     | 30%..70% : +/-3%                          |
|                                | 0%..100%: +/-5%                           |
| Sample rate                    | 5 s                                       |



General Specifications

|                                  |                                    |                                                                                                                                                                                                                 |                            |
|----------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>Environment</b>               |                                    | <ul style="list-style-type: none"><li>- Burst immunity</li><li>- Surge</li><li>- Conducted radiofrequency</li><li>- Power frequency magnetic fields</li><li>- Voltage dips, variations, interruptions</li></ul> | EN61000-4-4                |
| Pollution degree                 | 2(IEC 60664-1, par. 4.6.2)         |                                                                                                                                                                                                                 | EN61000-4-5                |
| Operating temperature            | -20 to +50°C (-4 to +122°F)        |                                                                                                                                                                                                                 | EN61000-4-6                |
| Storage temperature              | -40 to +70°C (-40 to + 158°F)      |                                                                                                                                                                                                                 |                            |
| <b>Humidity</b> (non-condensing) |                                    |                                                                                                                                                                                                                 | EN61000-4-8                |
| <b>Housing</b>                   |                                    | Emission                                                                                                                                                                                                        | EN61000-4-11               |
| Material                         | ABS                                |                                                                                                                                                                                                                 |                            |
| Colour                           | White matt                         | <ul style="list-style-type: none"><li>- Conducted and radiated emissions</li></ul>                                                                                                                              |                            |
| <b>Dimensions</b> (h x w x d)    |                                    | <ul style="list-style-type: none"><li>- Conducted emissions</li></ul>                                                                                                                                           | CISPR 22 (EN55022), cl.B   |
| <b>Protection degree</b>         |                                    | <ul style="list-style-type: none"><li>- Radiated emissions</li></ul>                                                                                                                                            | CISPR 16-2-1 (EN55016-2-1) |
| <b>Terminal block</b>            |                                    | <b>Approvals</b>                                                                                                                                                                                                | CISPR 16-2-3 (EN55016-2-3) |
| Dupline® bus                     | 2 x spring terminal                |                                                                                                                                                                                                                 | CE                         |
| Cross-sectional area             | Terminal: max. 1.5 mm <sup>2</sup> |                                                                                                                                                                                                                 | cULus according to         |
| <b>EMC</b>                       |                                    |                                                                                                                                                                                                                 | UL60950                    |
| Immunity                         | EN61000-6-2                        |                                                                                                                                                                                                                 |                            |
| - Electrostatic discharge        | EN61000-4-2                        |                                                                                                                                                                                                                 |                            |
| - Radiated radiofrequency        | EN61000-4-3                        |                                                                                                                                                                                                                 |                            |

Dimensions



Wiring Diagram

