



STULZ the natural choice

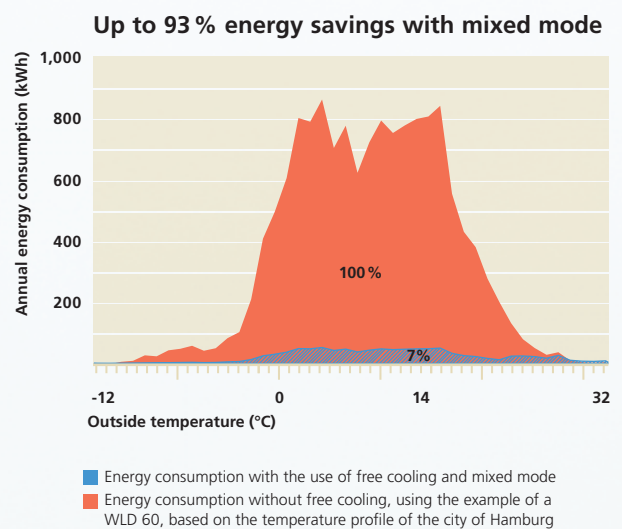
# Telecom Line Wall-Air Series



# STULZ precision air conditioners for outdoor installation – the Wall-Air series



With its Telecom Line, STULZ offers a range of professional air-conditioning solutions for the telecommunications infrastructure and for switch cabinets. All units are designed for 24/7 operation, 365 days a year, and offer maximum reliability and availability. In the unlikely event that a problem does arise, STULZ's network of competent partners and branches guarantees fast, trouble-free service.



In telecommunications containers, space is at a premium.

**Wall-Air** units are installed outside the container, therefore enabling the space inside the container to be used to the full.

The basic unit comes with cooling and microprocessor control. The performance spectrum of the series can be considerably extended by various optional extras, providing solutions for individual requirements.

The Wall-Air series is available in the basic version as an Upflow unit. The Displacement version is recommended for especially energy-efficient operation.

### Technical features of the Wall-Air series

- Energy-saving operation thanks to proportional free cooling facility
- C2020 microprocessor control
- Automatic restart after power failure
- Speed-controlled condenser and evaporator fan
- 48V DC backup operation
- Contacts for various alarm signals for connection to a monitoring system
- Refrigerant R407C
- Mixed mode for energy-saving operation



Wall-Air Upflow

Wall-Air Displacement

### Displacement principle

Displacement units blow out the cold air close to the ground at low speed (< 1 m/s). Due to the low speed at which the air is flowing, a "pool" of cold air forms on the floor. This cold air is drawn in by fans integrated in the server rack as a function of the heat load, and the heated air is then expelled upwards. Because this method prevents hot and cold air from mixing, the displacement unit can draw in the air at 30°C, instead of at 25°C as was previously the case. The enlarged temperature spread enables the displacement units to work more quietly and efficiently.

### Free cooling

At low outside temperatures, cooling is direct with outside air. The outside air is conveyed into the container when the air flap is open. Therefore, when outside temperatures are low, energy-intensive compressor cooling is not necessary.

### Mixed mode

Once the outside temperature exceeds a given threshold, free cooling alone is no longer sufficient. Then, in mixed mode, the runtimes of the compressor are kept to a minimum by the simultaneous use of free cooling and compressor cooling. In this way, depending on the local temperature profile, the annual energy costs can be cut by a further 10%. The partial load mode of the air conditioner produces further potential savings.

# The standard air-conditioning solution: Wall-Air Upflow

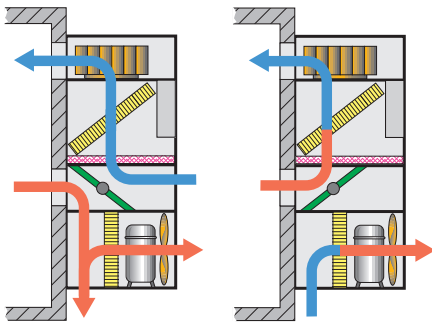


## Technical features

- Scroll compressors (CVS 50 and upwards)
- Air filter, filter class EU3
- Housing of galvanised, powder-coated sheet steel
- Air shortage and filter alarm

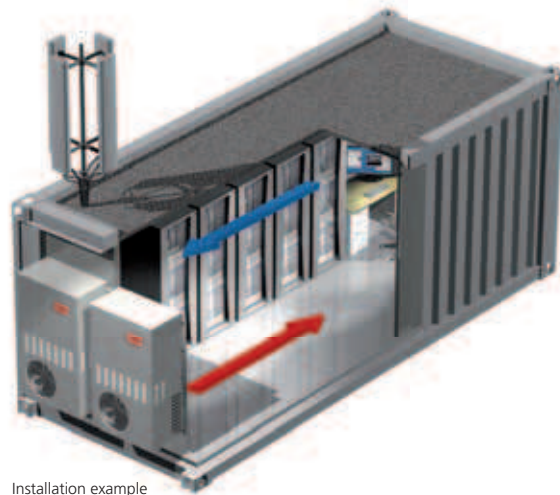
## Options

- Electric heating
- Humidity sensor
- Anti vandalism sound absorption cover
- High-temperature refrigerant R134a
- External operator terminal for C2020
- Epoxy finish coating for heat exchangers
- Air intake and blow-out grilles



Free cooling

Compressor operation



Installation example

Wall-Air Upflow									
Unit type		CVS40 HR2 Type1	CVS50 HR2 Type1	CVS60 HR2 Type1	CVS80 HR2 Type1	CVS90 HR2 Type1	CVSA2 HR2 Type1	CVSA4 HR2 Type1	CVSA7 HR2 Type1
Cooling capacity (total) <sup>1) 2)</sup>	kW	3.8	5.2	6.4	8.4	9.3	11.9	14.0	16.8
Cooling capacity (sensible) <sup>1) 2)</sup>	kW	3.8	5.2	5.7	7.4	8.6	11.9	14.0	14.7
Noise level (internal/external) <sup>3)</sup>	dB (A)	54/63	54/63	55/63	58/69	58/66	62/71	69/71	69/71
Air flow	m <sup>3</sup> /h	1,000	1,000	1,600	2,100	2,500	2,850	2,850	3,500
Height	mm	1,500	1,500	1,500	1,725	1,725	1,910	1,910	1,910
Width	mm	880	880	880	960	960	1,170	1,170	1,170
Depth	mm	490	490	490	565	565	600	600	600
Weight	kg	139	143	146	175	185	230	237	240

<sup>1)</sup> Operating conditions: Inside temperature 25 °C/rel. humidity 40%/outside temperature 35 °C

<sup>2)</sup> 400V/3Ph/N/50Hz + 48V DC

<sup>3)</sup> 2 m distance, free-field



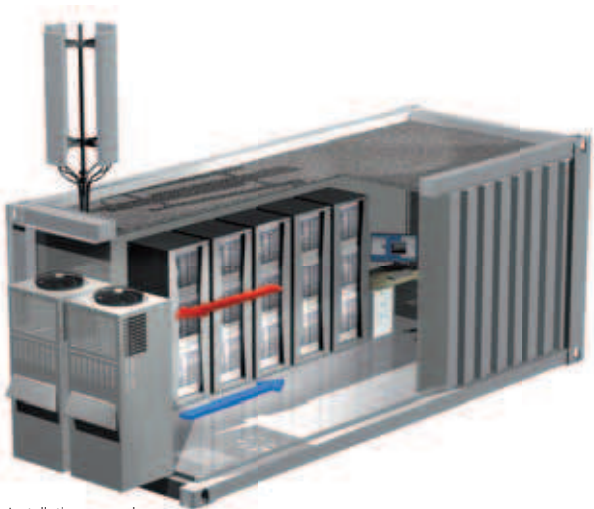
# The low-noise solution: Wall-Air Displacement

## Technical features

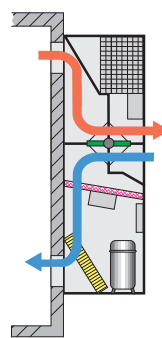
- Displacement principle for quiet running
- Outside air conditions  
-20/+50°C winter/summer
- G4 zigzag filter

## Options

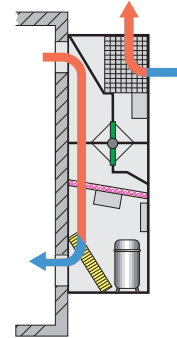
- High temperature operation up to 55°C with R134a
- Compressor soft start
- Electric heating
- Aluminium housing
- Condenser with anti-corrosive finish
- Supply-air diffuser
- Serial interface RS485 for connection to BMS systems
- Electrical cables ready to plug in
- Winter kit up to -40°C
- External operator terminal for C2020
- Humidity sensor



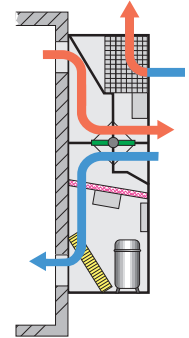
Installation example



Free cooling



Compressor operation



Mixed mode

Wall-Air Displacement		WLD40 HR2 Type1	WLD60 HR2 Type1	WLD80 HR2 Type1	WLD90 HR2 Type1	WLDA2 HR2 Type1	WLDA4 HR2 Type1
Cooling capacity (total) <sup>1) 2)</sup>	kW	4.3	6.0	8.0	10.0	12.0	14.0
Cooling capacity (sensible) <sup>1) 2)</sup>	kW	4.3	6.0	8.0	10.0	12.0	14.0
Noise level (internal/external) <sup>3)</sup>	dB (A)	59/50	49/50	57/51	59/53	62/54	63/54
Air flow (DX)	m <sup>3</sup> /h	1,100	1,400	2,300	2,700	3,200	3,600
Air flow (free cooling)	m <sup>3</sup> /h	900	1,100	1,800	2,200	2,600	2,900
Height	mm	2,090	2,090	2,260	2,260	2,260	2,260
Width	mm	880	880	990	990	990	990
Depth	mm	660	660	850	850	850	850
Weight	kg	170	210	230	246	248	251

<sup>1)</sup> Operating conditions: Inside temperature 30°C/rel. humidity 30%/outside temperature 35°C

<sup>2)</sup> 400V/3Ph/N/50Hz + 48V DC

<sup>3)</sup> 2 m distance, free-field

# The C2020 control system

The C2020 consists of an IO controller inside the unit and an optional operator terminal. The IO controller controls all the functions, the operator terminal (keypad) displays the most important operating states and alarms. The keypad, which also features an LCD, is able to configure and monitor up to 5 units.

## Sequencing

- Using the C2020, any desired number of standby units can be configured in an air-conditioning system. A system has a maximum number of 5 units. If an individual unit drops out or the heat load rises, inactive standby units are switched in for additional support.
- The operating times of all connected air conditioners are compared to ensure that each one is used to an equal extent.

## Controlling the various operating modes

- Compressor operation
- Free cooling function dependent on temperature and enthalpy
- Mixed mode management
- Backup ventilation upon failure of the main power supply
- Heating
- Humidification and dehumidification (humidification requires an external humidifier)

## Step-by-step operator guidance via keypad

- Operator
- Service (password-protected)
- Manufacturer (password-protected)

## Multilingual display

- The keypad can offer a choice of seven languages for the display of general menus, alarms and setpoints.

## Flash EPROM for simple configuration and software updates

- Central configuration of units via laptop
- Hardware key for uploading and downloading software without a laptop and for copying the configuration to other units



## Individual forwarding of alarms

- Via bus system/BMS systems (optional)
  - Via voltage free contacts (standard)
- 9 off-load contacts are available. Alarms can be assigned a high or low priority.

## High-pressure alarm management

- In order to avoid making unnecessary service calls, high-pressure alarms are initially reset three times automatically. Then, after the fourth error message, the alarm must be deleted manually after 4 hours.

## Night mode

- Condenser and evaporator fan speed is limited in a time-controlled manner, to ensure quiet operation e.g. at night or the weekend.

## Energy-saving mode

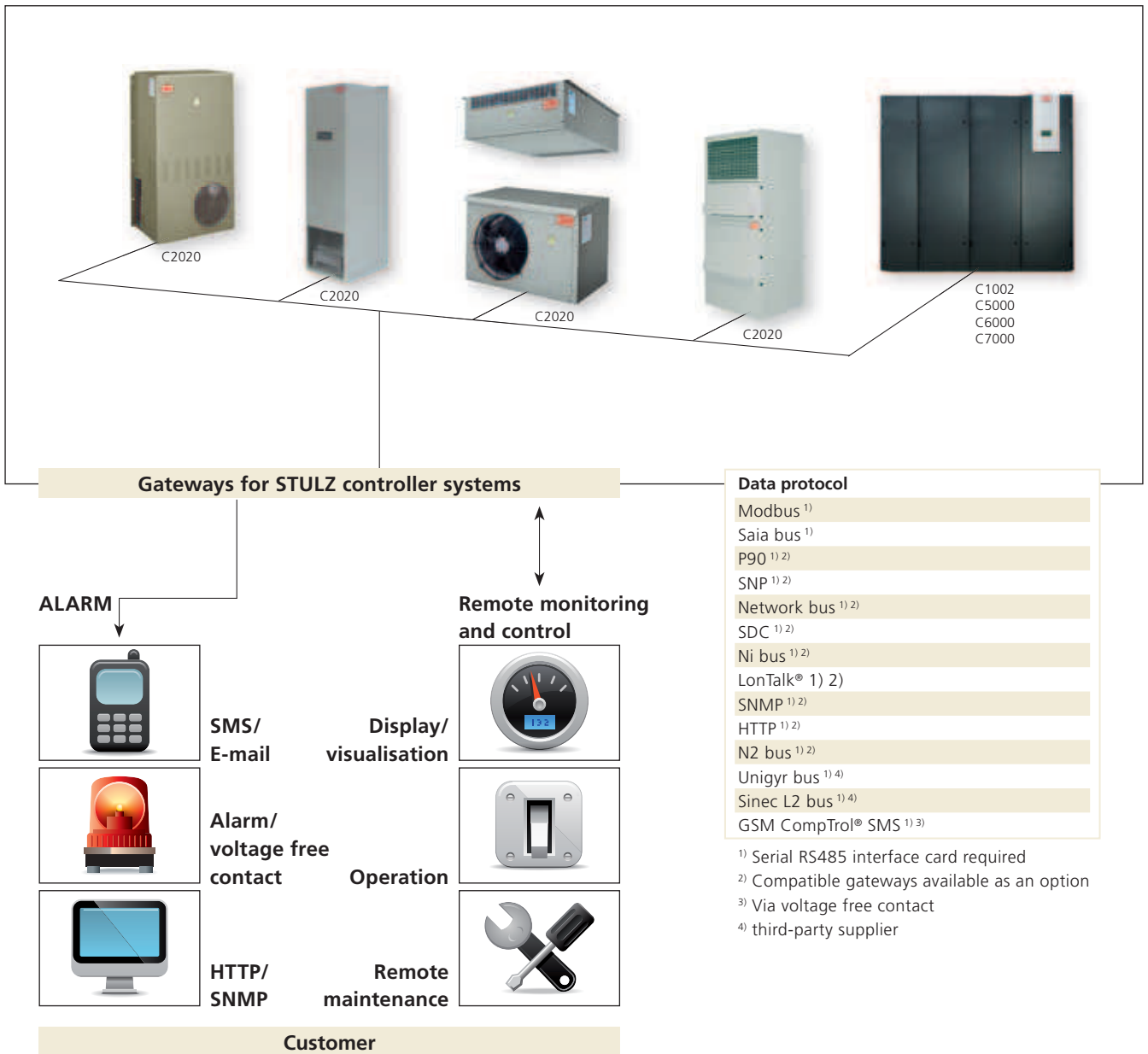
- The fan speed is automatically reduced (adjustable) at times when neither heating nor cooling is required.

## Integration in existing air-conditioning systems

- The comfort air conditioners commonly installed in base stations can be activated by the C2020 control. Air conditioning becomes more reliable and considerably more efficient.

# Network solutions for communication without limits

- Compatible with all common BMS systems
- Communication using SNMP and HTTP IP protocols
- STULZ TeleCompTrol monitoring system as a bus and modem version



## STULZ Company Headquarters

- D** **STULZ GmbH**  
Holsteiner Chaussee 283 · 22457 Hamburg  
Sales Germany, Tel.: +49(40)55 85-306  
Sales International, Tel.: +49(40)55 85-269  
Fax: +49(40)55 85-308 · products@stulz.de

## STULZ Subsidiaries

- AUS** **STULZ AUSTRALIA PTY LTD**  
34 Bearing Road · Seven Hills NSW 21 47  
Tel.: +61(2)96 74 47 00 · Fax: +61(2)96 74 67 22 · sales@stulz.com.au
- CN** **STULZ AIR TECHNOLOGY SYSTEMS (SHANGHAI) CO., LTD.**  
No. 999 Shen Fu Road, Min Hang District · Shanghai 201108 · P.R. China  
Tel.: +86(21) 54 83 02 70 · Fax: +86(21)54 83 02 71 · info@stulz.cn
- E** **STULZ ESPAÑA S.A.**  
Calle Lluvia Nº 1 · 28918 Leganés (Madrid)  
Tel.: +34(91)517 83 20 · Fax: +34(91)517 83 21 · info@stulz.es
- F** **STULZ FRANCE S. A. R. L.**  
107, Chemin de Ronde · 78290 Croissy-sur-Seine  
Tel.: +33(1)34 80 47 70 · Fax: +33(1)34 80 47 79 · info@stulz.fr
- GB** **STULZ U. K. LTD.**  
First Quarter · Blenheim Rd. · Epsom · Surrey KT 19 9 QN  
Tel.: +44(1372)74 96 66 · Fax: +44(1372)73 94 44 · sales@stulz.co.uk
- I** **STULZ S.P.A.**  
Via Torricelli, 3 · 37067 Valeggio sul Mincio (VR)  
Tel.: +39(045)633 16 00 · Fax: +39(045)633 16 35 · info@stulz.it
- IN** **STULZ-CHSPL (INDIA) PVT. LTD.**  
006, Jagruti Industrial Estate · Mogul Lane, Mahim · Mumbai · 400 016  
Tel.: +91(22) 56 66 94 46 · Fax: +91(22) 56 66 94 48 · info@stulz.in
- NL** **STULZ GROEP B. V.**  
Postbus 75 · 1180 AB Amstelveen  
Tel.: +31(20)54 51 111 · Fax: +31(20)64 58 764 · stulz@stulz.nl
- NZ** **STULZ NEW ZEALAND LTD.**  
Office 71, 300 Richmond Rd. · Grey Lynn · Auckland  
Tel.: +64(9)360 32 32 · Fax: +64(9)360 21 80 · sales@stulz.co.nz
- PL** **STULZ POLSKA SP. Z O.O.**  
Budynek Mistral · Al. Jerozolimskie 162 · 02 – 342 Warszawa  
Tel.: +48(22)883 30 80 · Fax: +48(22)824 26 78 · info@stulz.pl
- USA** **STULZ AIR TECHNOLOGY SYSTEMS (SATS), INC.**  
1572 Tilco Drive · Frederick, MD 21704  
Tel.: +1(301)620 20 33 · Fax: +1(301)662 54 87 · info@stulz-ats.com
- ZA** **STULZ SOUTH AFRICA PTY. LTD.**  
P.O.Box 15687 · Lambton 1414 · Gauteng  
Tel.: +27(11)873 68 06 · Fax: +27(11)873 31 3 · dudley@stulz.co.za

## STULZ the natural choice

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... With specialist, competent partners in our subsidiaries and exclusive sales and service partners around the world. Our five production sites are in Europe, North America and Asia.