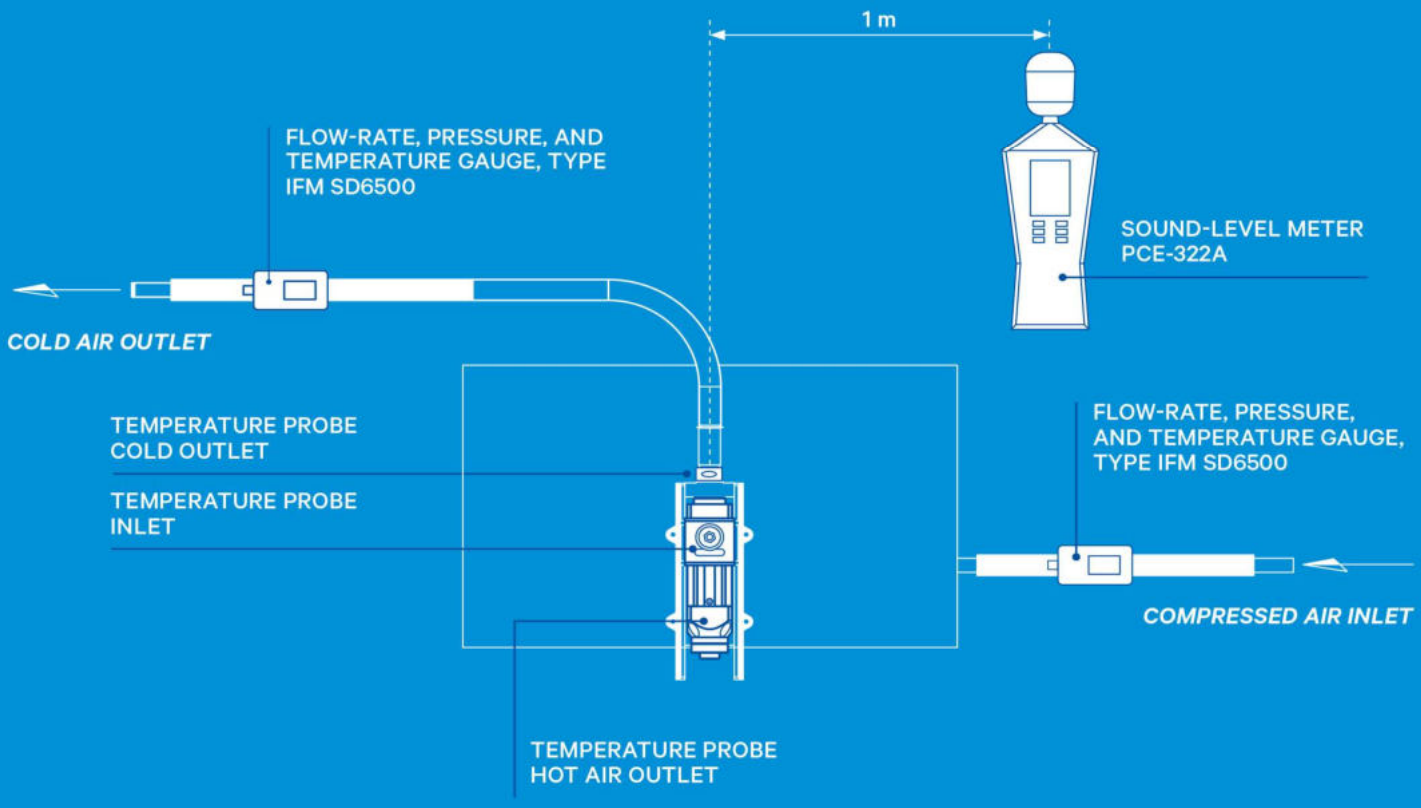
PNEUMATIC COOLERS

Description of the set-up and instrumentation used for our tests on pneumatic coolers.



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SERIES VR / VRX / VR U-G

The **VR / VRX / VR U-G SERIES** coolers are state-of-the-art solutions for compressed-air cooling based on the principle of the Vortex Tube.
The excellent performances of flow-rate and ΔT generated, the design, the fastenings that make them extremely versatile to mount, and the possibility to combine them in a patented system with the air amplifiers (to use the hot air flow), offer customers an innovative, effective, and inexpensive solution to cool down metal and plastic parts, electric and electronic control cabinets, and mechanical applications. All this with a simple connection to the compressed-air line.

- ΔT up to -40°C for the cold flow and +60°C for the hot flow, in comparison to the temperature of air at inlet
- Easy to install, thanks to flanges and magnetic supports
- Patented system of hot air's recovery to actuate an amplifier/conveyor
- Made of corrosion-resistant materials
- No moving part, so not subject to wear and tear
- No electricity or chemical substances required
- They do not cause either sparkles or interferences
- Instant operation
- Reliable and maintenance-free

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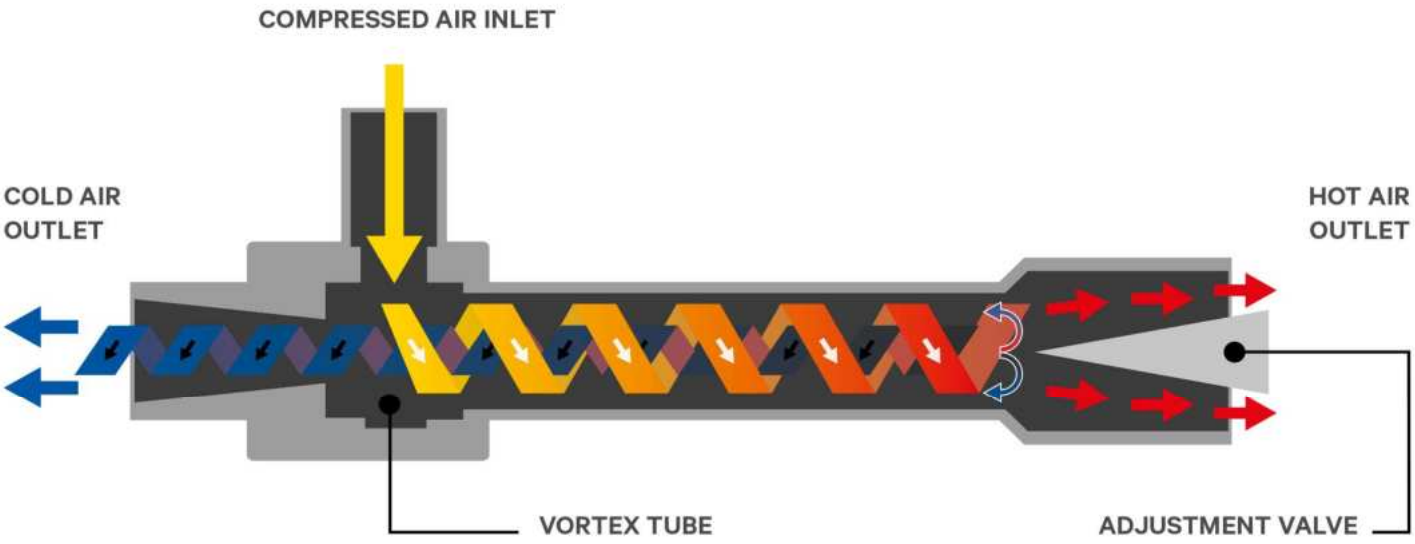
PNEUMATIC COOLERS



Ranque-Hilsch tube (Vortex tube)

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VORTEX TUBES

DESCRIPTION OF VORTEX TUBES

The Ranque-Hilsch tube, in the industrial sector better known as "Vortex tube", is a device that splits a compressed-air flow in 2 separate streams: one of cold air, and one of hot air.

The core of the system is the vortex chamber, which is connected to 2 opposed tubes, one of which features a valve. When the compressed air is injected tangentially in the chamber, this causes the rotary movement of air towards one of the exits. This vortex moves rotating at high speed and brushing against the inner side of the tube, increasing in temperature; the valve placed at the hot air outlet enables some of it to be exhausted. The remaining part goes back, creating a low pressure vortex moving towards the other exit and giving away heat to the first vortex. So, this flow is much colder.

The ΔT generated is inversely proportional to the volume of the flow.
The differences in temperature are considerable and can reach -40°C for the cold flow and 60°C for the hot flow.

In the industrial field the Vortex tubes have been employed for a long time and have found a variety of applications in which they offer a major added value.
They have great cooling performances, are very easy to install and have instant operation, have no moving part and therefore are maintenance-free. Plus, they do not require electric power, so they are suitable for dangerous environments and humid areas.

If the application enables their use, they are price-worthier than electric coolers.
Our coolers SERIES VR and VRX, beside the excellent performances in comparison to the other products in the market, were designed to be easily customised according to customers' demands.

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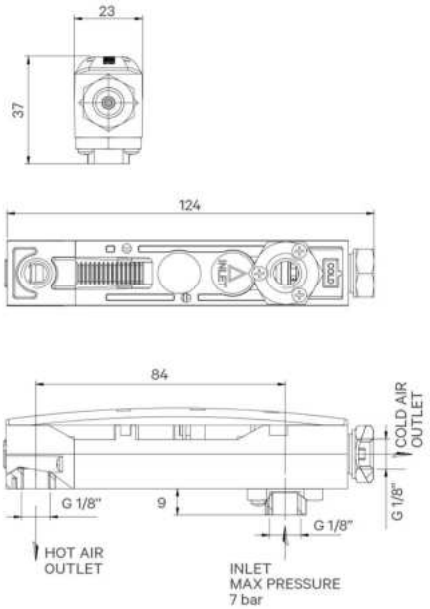
SERIES VR-100

MODULAR PNEUMATIC COOLERS



GENERAL FEATURES - **VR-100**	
Materials	Body and cover: Nylon 6.6 Air connections and nozzles: brass
Air inlet port	G-1/8" F
Outlet port (cold flow)	G-1/8" F
Exhaust port (hot flow)	G-1/8" F
Recommended hose	Ø-8x1
Air supply pressure	3 ÷ 7 bar
Cooling power*	120 W - 100 Kcal/h - 400 BTUH
Optional magnetic support	KACM-VR100

*with inlet pressure 7 Bar and inlet temperature 20°C

PERFORMANCES AND CONSUMPTION TABLE (with air temperature at inlet 20°C)

Pressure bar	Outlet temperature cold flow °C	Consumption NL/min
1	-1.5	32
2	-8	53
3	-15	74
4	-21,5	94
5	-24,5	115
6	-26,5	135
7	-28	154

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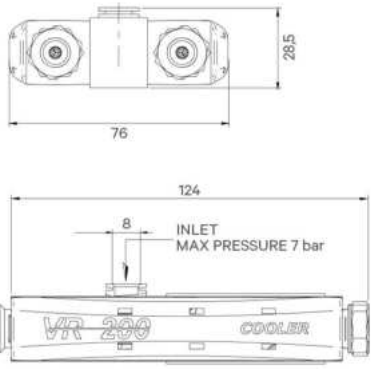
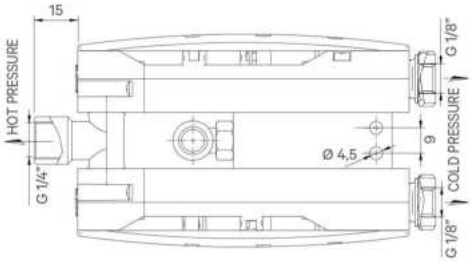
SERIES VR-200

MODULAR PNEUMATIC COOLERS





GENERAL FEATURES - **VR-200**	
Materials	Body and cover: Nylon 6.6 Air connections and nozzles: brass
Air inlet port	Push-in fitting Ø-8x6
Outlet port (cold flow)	2 x G-1/8" F
Exhaust port (hot flow)	2 x G-1/8" F
Recommended hose	Ø-8x1
Air supply pressure	3 ÷ 7 bar
Cooling power*	240 W - 200 Kcal/h - 800 BTUH
Optional magnetic support	KACM-VR200

*with inlet pressure 7 Bar and inlet temperature 20°C

PERFORMANCES AND CONSUMPTION TABLE (with air temperature at inlet 20°C)

Pressure bar	Outlet temperature cold flow °C	Consumption NL/min
1	-1,5	64
2	-8	106
3	-15	148
4	-21,5	196
5	-24,5	230
6	-26,5	270
7	-28	308

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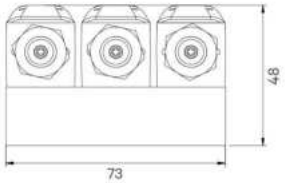
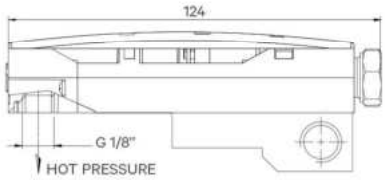
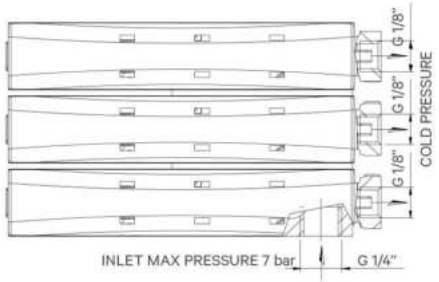
SERIES VR-300T • 3 OUTLETS
MODULAR PNEUMATIC COOLERS







GENERAL FEATURES - **VR-300T**	
Materials	Body and cover: Nylon 6.6 Air connections and nozzles: brass
Air inlet port	G-1/4" F
Outlet port (cold flow)	3 x G-1/8" F
Exhaust port (hot flow)	3 x G-1/8" F
Recommended hose	Ø-8x1
Air supply pressure	1 ÷ 7 bar
Cooling power*	360 W - 300 Kcal/h - 1200 BTUH
Optional magnetic support	KACM-VR300

*with inlet pressure 7 Bar and inlet temperature 20°C

PERFORMANCES AND CONSUMPTION TABLE (with air temperature at inlet 20°C)

Pressure bar	Outlet temperature cold flow °C	Consumption NL/min
1	-1,5	96
2	-8	159
3	-15	222
4	-21,5	282
5	-24,5	345
6	-26,5	405
7	-28	462

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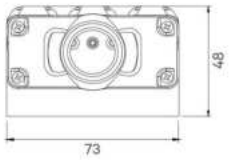
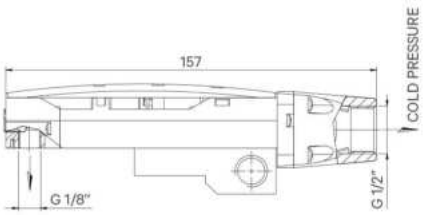
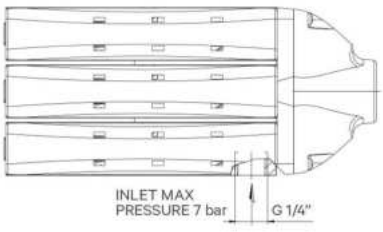
SERIES VR-300U • SINGLE OUTLET
MODULAR PNEUMATIC COOLERS







GENERAL FEATURES - **VR-300U**	
Materials	Body and cover: Nylon 6.6 Air connections and nozzles: brass
Air inlet port	G-1/4" F
Outlet port (cold flow)	1 x G-1/2" F
Exhaust port (hot flow)	3 x G-1/8" F
Recommended hose	Ø-8x1
Air supply pressure	3 ÷ 7 bar
Cooling power*	360 W - 300 Kcal/h - 1200 BTUH
Optional magnetic support	KACM-VR300

*with inlet pressure 7 Bar and inlet temperature 20°C

PERFORMANCES AND CONSUMPTION TABLE (with air temperature at inlet 20°C)

Pressure bar	Outlet temperature cold flow °C	Consumption NL/min
1	-1,5	96
2	-8	159
3	-15	222
4	-21,5	282
5	-24,5	345
6	-26,5	405
7	-28	462

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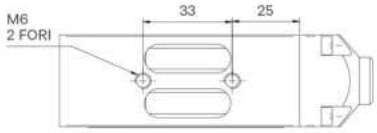
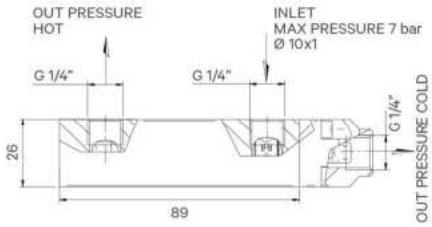
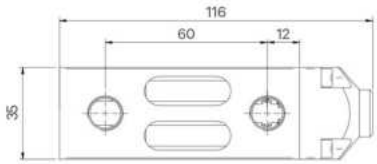
SERIES VR-200U • SINGLE OUTLET

HIGH-PERFORMANCE COMPACT PNEUMATIC COOLERS







*Test made with insulated LOC-LINE flexible tube at cold outlet, and tube L= 1 m at hot air outlet.

GENERAL FEATURES - VR-200U	
Materials	Body and cover: Delrin Ports and nozzles: Brass
Air inlet port	G-1/4" F
Outlet port (cold flow)	G-1/4" F
Exhaust port (hot flow)	G-1/4" F
Recommended hose	Ø-8x1
Air supply pressure	max 7 bar
Cooling power*	264 W - 220 Kcal/h - 880 BTUH
Optional magnetic support	By means of 2 threads M6 on the body
Weight	210 g

* With inlet pressure 7 Bar and inlet temperature 20°C.

PERFORMANCES AND CONSUMPTION TABLE (with air temperature at inlet 20°C)

Pressure bar	Outlet temperature cold flow °C	Consumption NL/min	Noise level* dBA
1	-2	64	50
2	-12	106	54
3	-18	148	58
4	-23	188	61
5	-26	230	65
6	-28	270	68
7	-31	308	70

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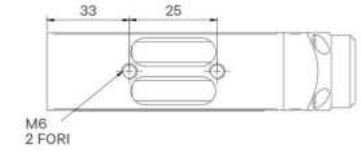
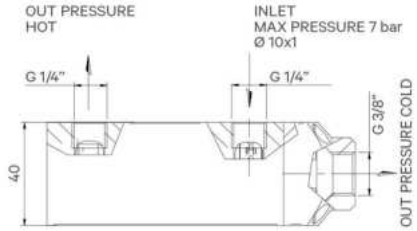
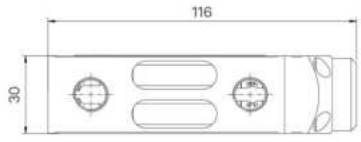
SERIES VR-400U • SINGLE OUTLET

HIGH-PERFORMANCE COMPACT PNEUMATIC COOLERS







GENERAL FEATURES - **VR-400U**	
Materials	Body and cover: Delrin Ports and nozzles: Brass
Air inlet port	G-1/4" F
Exhaust port (hot flow)	G-1/4" F
Recommended hose	Ø-10x1
Supply pressure	max 7 bar
Cooling power*	528 W - 440 Kcal/h - 1760 BTUH
Optional fixation of magnetic kit	By means of 2 threads M6 on body
Weight	285 g

* With inlet pressure 7 Bar and inlet temperature 20°C..

PERFORMANCES AND CONSUMPTION TABLE (with air temperature at inlet 20°C)

Pressure bar	Outlet temperature cold flow °C	Consumption NL/min	Noise level* dBA
1	-2	128	55
2	-12	212	60
3	-18	296	64
4	-23	376	67
5	-26	460	70
6	-28	540	71
7	-31	616	73

*Test made with insulated LOC-LINE flexible tube at cold outlet, and tube L= 1 m at hot air outlet.

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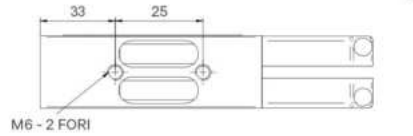
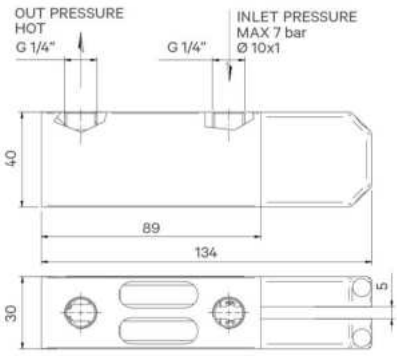
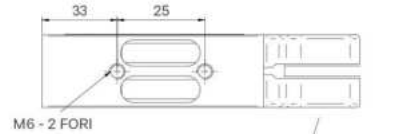
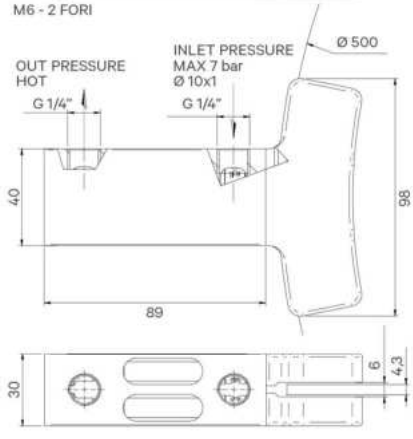
SERIES VR-400G • TO COOL DOWN BLADES, BELTS, AND BANDS

HIGH-PERFORMANCE COMPACT PNEUMATIC COOLERS









GENERAL FEATURES - VR-400G

Materials	Body: Derlin Clamps: ABS (other materials on request) Inner spindles: brass
Air inlet port	G-1/4" F
Clamps width (cold flow)	5 mm (customised dimensions on request)
Outlet port (hot flow)	G-1/4" F
Recommended hose	Ø-10x1
Air supply pressure	max 7 bar
Cooling power*	528 W - 440 Kcal/h - 1760 BTUH
Fixation	By means of two M6 threads on body
Weight	340 g

* With inlet pressure 7 Bar and inlet temperature 20°C..

PERFORMANCES AND CONSUMPTION TABLE (with air temperature at inlet 20°C)

Pressure bar	Outlet temperature cold flow °C	Consumption NL/min
1	-2	128
2	-12	212
3	-18	296
4	-23	376
5	-26	460
6	-28	540
7	-31	616

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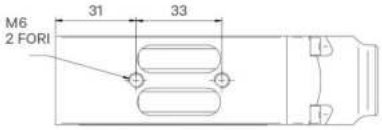
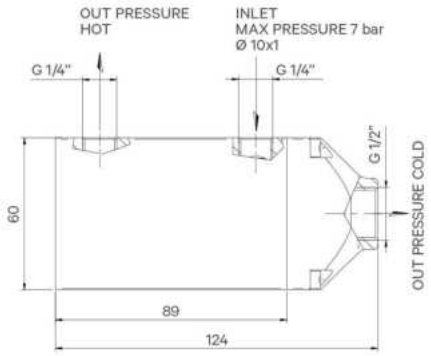
SERIES VR-600U • SINGLE OUTLET

HIGH-PERFORMANCE COMPACT PNEUMATIC COOLERS





*Test made with insulated LOC-LINE flexible tube at cold outlet, and tube L= 1 m at hot air outlet.

GENERAL FEATURES - **VR-600U**	
Materials	Body: Derlin Ports and nozzles: Brass
Air inlet port	G-1/4" F
Clamps width (cold flow)	G-1/2" F
Outlet port (hot flow)	G-1/4" F
Recommended hose	Ø-10x1
Air supply pressure	max 7 bar
Cooling power*	720 W - 600 Kcal/h - 2400 BTUH
Fixation	By means of two M6 threads on body
Weight	460 g

* With inlet pressure 7 Bar and inlet temperature 20°C..

PERFORMANCES AND CONSUMPTION TABLE (with air temperature at inlet 20°C)

Pressure bar	Outlet temperature cold flow °C	Consumption NL/min	Noise level* dBA
1	-2	192	58
2	-12	318	64
3	-18	444	68
4	-23	564	72
5	-26	690	75
6	-28	810	78
7	-31	924	80

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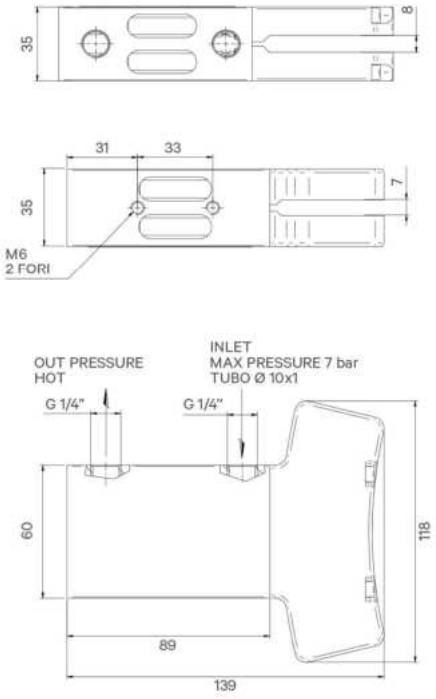
SERIES VR-600G • TO COOL DOWN BLADES, BELTS, AND BANDS

HIGH-PERFORMANCE COMPACT PNEUMATIC COOLERS

SPECIAL VERSION FEATURING INLET
FOR MINIMAL LUBRICATION



GENERAL FEATURES- VR-600G

Materials	Body: Derlin Clamps: ABS (other materials on request) Inner spindles: Brass
Air inlet port	G-1/4" F
Clamps width (cold flow)	11 mm (customised dimensions on request)
Outlet port (hot flow)	G-1/4" F
Recommended hose	Ø-10x1
Air supply pressure	max 7 bar
Cooling power*	790 W - 660 Kcal/h - 2640 BTUH
Fixation	By means of two M6 threads on body
Weight	540 g

* With inlet pressure 7 Bar and inlet temperature 20°C..

PERFORMANCES AND CONSUMPTION TABLE (with air temperature at inlet 20°C)

Pressure bar	Outlet temperature cold flow °C	Consumption NL/min
1	-2	192
2	-12	318
3	-18	444
4	-23	564
5	-26	690
6	-28	810
7	-31	924

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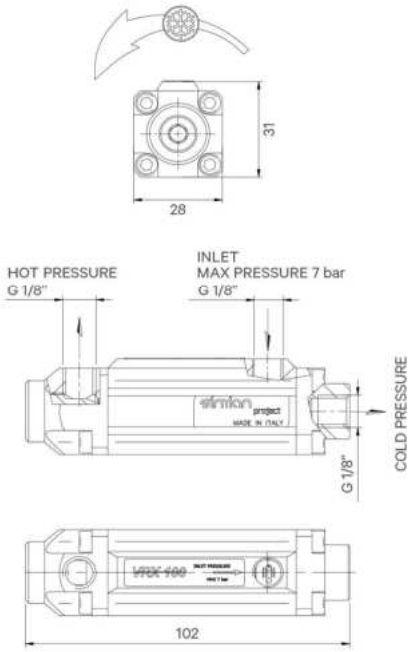
SERIES VRX-100

HIGH-PERFORMANCE PNEUMATIC COOLERS



*Test made with insulated LOC-LINE flexible tube at cold outlet, and tube L= 1 m at hot air outlet.

GENERAL FEATURES - **VRX-100**	
Materials	Sleeve: anodized aluminium Ends: Nylon 6.6
Air inlet port	G-1/8" F
Outlet port (cold flow)	G-1/8" F
Exhaust port (hot flow)	G-1/8" F
Recommended hose	Ø-8x1
Air supply pressure	1 ÷ 7 bar
Cooling power*	132 W - 110 Kcal/h - 440 BTUH
Optional magnetic support	KACM-VRX-100
Weight	170 g

* With inlet pressure 7 Bar and inlet temperature 20°C..

PERFORMANCES AND CONSUMPTION TABLE (with air temperature at inlet 20°C)

Pressure bar	Outlet temperature cold flow °C	Consumption NL/min	Noise level* dBA
1	-2	32	54
2	-12	53	58
3	-18	74	62
4	-23	94	64
5	-26	115	64
6	-28	135	66
7	-31	154	68

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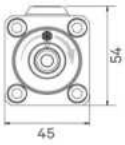
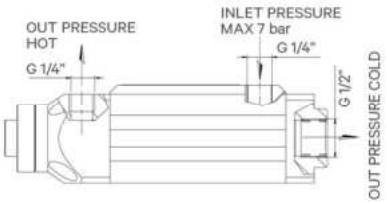
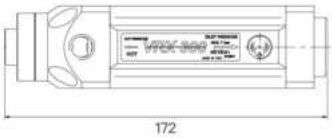
SERIES VRX-300

HIGH-PERFORMANCE PNEUMATIC COOLERS







GENERAL FEATURES - **VRX-300**	
Materials	Sleeve: anodized aluminium Ends: Delrin100
Air inlet port	G-1/4" F
Outlet port (cold flow)	G-1/2" F
Exhaust port (hot flow)	G-1/4" F
Recommended hose	Ø 10x1
Air supply pressure	1 ÷ 7 bar
Cooling power*	600 W - 523 Kcal/h - 2075 BTUH
Optional magnetic support	KACM-VRX500
Weight	740 g

* With inlet pressure 7 Bar and inlet temperature 20°C..

PERFORMANCES AND CONSUMPTION TABLE (with air temperature 20°C)

Pressure bar	Outlet temperature cold flow °C	Consumption NL/min	Noise level* dBA
1	-3	50	67
2	-7	170	72
3	-10	290	74
4	-13	410	76
5	-16	525	78
6	-17	650	80
7	-19	750	82

*Test made with insulated LOC-LINE flexible tube at cold outlet, and tube L= 1 m at hot air outlet.

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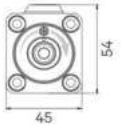
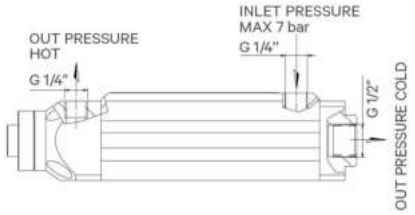
SERIES VRX-500

HIGH-PERFORMANCE PNEUMATIC COOLERS





GENERAL FEATURES - **VRX-500**	
Materials	Sleeve: anodized aluminium Ends: Delrin100
Air inlet port	G-1/4" F
Outlet port (cold flow)	G-1/2" F
Exhaust port (hot flow)	G-1/4" F
Recommended hose	Ø 10x1
Air supply pressure	1 ÷ 7 bar
Cooling power*	730 W - 630 Kcal/h - 2500 BTUH
Optional magnetic support	KACM-VRX500
Weight	860 g

* With inlet pressure 7 Bar and inlet temperature 20°C..

PERFORMANCES AND CONSUMPTION TABLE (with air temperature 20°C)

Pressure bar	Outlet temperature cold flow °C	Consumption NL/min	Noise level* dBA
1	-3	120	66
2	-7	250	71
3	-10	380	72
4	-13	500	75
5	-16	633	77
6	-17	783	78
7	-19	900	80

*Test made with insulated LOC-LINE flexible tube at cold outlet, and tube L= 1 m at hot air outlet.

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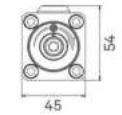
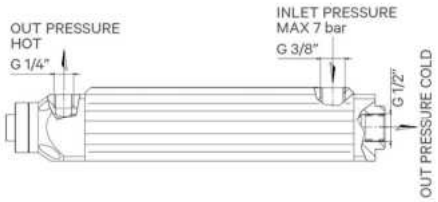
SERIES VRX-1000

HIGH-PERFORMANCE PNEUMATIC COOLERS





GENERAL FEATURES - **VRX-1000**	
Materials	Sleeve: anodized aluminium Ends: Delrin100
Air inlet port	G-3/8" F
Outlet port (cold flow)	G-1/2" F
Exhaust port (hot flow)	G-1/4" F
Recommended hose	Ø 12x1
Air supply pressure	1 ÷ 7 bar
Cooling power*	1650 W - 1417 Kcal/h - 5600 BTUH
Optional magnetic support	KACM-VRX1000
Weight	1060 g

* With inlet pressure 7 Bar and inlet temperature 20°C..

PERFORMANCES AND CONSUMPTION TABLE (with air temperature at inlet 20°C)

Pressure bar	Outlet temperature cold flow °C	Consumption NL/min	Noise level* dBA
1	-3	230	70
2	-7	500	73
3	-10	800	75
4	-13	1100	77
5	-16	1424	79
6	-17	1760	81
7	-19	2025	83

*Test made with insulated LOC-LINE flexible tube at cold outlet, and tube L= 1 m at hot air outlet.

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ACCESSORIES
PNEUMATIC COOLERS

MAGNETIC SUPPORT	
Part-number	Cooler
KACM-VR100	VR100
KACM-VR200	VR200
KACM-VR300	VR300
KACM-VR246	VR200U-G / VR400U-G / VR600U-G
KACM-VRX100	VRX100
KACM-VRX300 / VRX500	VRX300 / VRX500
KACM-VRX1000	VRX1000

ADJUSTABLE NOZZLE (INSULATED VERSION) FOR COLD OUTLET)				
Part-number	Port Ø	Nozzle Ø	No. modules	Length mm
AC28	1/8"	3	4	100
AC34	1/4"	3	4	100
AC47	3/8"	6	6	180
AC27	1/2"	6	6	180

ADJUSTABLE NOZZLE (NON-INSULATED VERSION) FOR COLD OUTLET)				
Part-number	Port Ø	Nozzle Ø	No. modules	Length mm
82021/8 1/8-3	1/8"	3	8	155
84041/6 1/2-9	1/2"	9	6	170

Other configurations available on request

STRAIGHT PUSH-IN FITTING FOR AIR SUPPLY			
Part-number	Hose Ø	Size	Cooler
S6510	8	1/8"	VR-100 / VR-200 / VR-300 / VRX-100
S6510	10	1/4"	VRX-300 / VRX-500
S6510	12	1/4"	VRX-1000
S6510	10	3/8"	VR-600

ELBOW PUSH-IN FITTING FOR AIR SUPPLY			
Part-number	Hose Ø	Size	Cooler
S6520	8	1/8"	VR-100 / VR-200 / VR-300 / VRX-100
S6520	10	1/4"	VRX-300 / VRX-500
S6520	12	1/4"	VRX-1000
S6520	10	3/8"	VR-600

SILENCER FOR HOT FLOW EXHAUST		
Part-number	Size	Noise at 6 bar dBA
SC 1/8	1/8"	70
SC 1/4	1/4"	67
SC 3/8	3/8"	67

In sintered bronze.

SILENCER FOR COLD FLOW OUTLET (ITEM FOR VRX-300/VRX-500)	
Codice	Size
AC25	1/2"

CONTROL UNITS XTRONIC2

1 / 2 / 3 SOLENOID VALVES

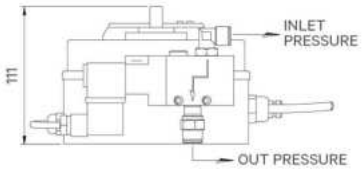
CONTROL UNIT XTRONIC2 C EV-1S/C

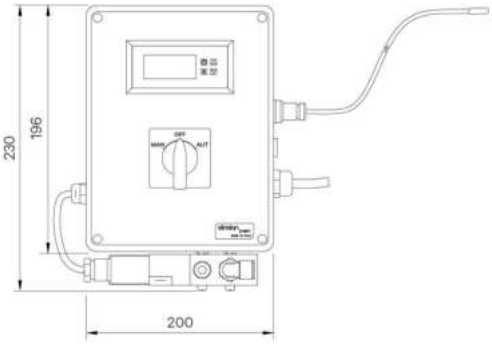
DESCRIPTION

Control box featuring:

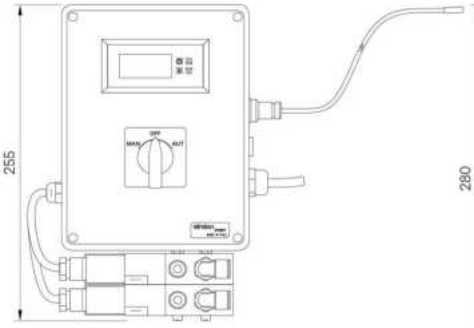
1. Switch for automatic/manual operation
2. Solenoid valve
3. Electronic kit with 7-segment display
4. Temperature probe and safety fuses (high-temperature kit available on request).

GENERAL FEATURES - XTRONIC2 (1/2/3 SOLENOID VALVES)	
Supply voltage	220 V AC
Recommended hose	Ø 10x1
Supply pressure	max 7 bar
Probe length	1 m
Application	Outside of cabinets
Weight	
XTRONIC2 C-EV-1S/C (1 solenoid valve)	1300 g
XTRONIC2 C-2EV-1S/C (2 solenoid valves)	1600 g
XTRONIC2 C-3EV-1S/C (3 solenoid valves)	1900 g

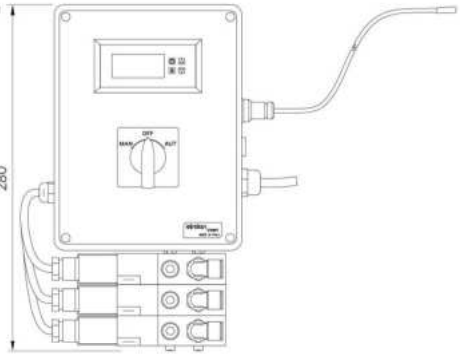




XTRONIC2 C-EV-1S/C
1 SOLENOID VALVE



XTRONIC2 C-2EV-1S/C
2 SOLENOID VALVES



XTRONIC2 C-3EV-1S/C
3 SOLENOID VALVES

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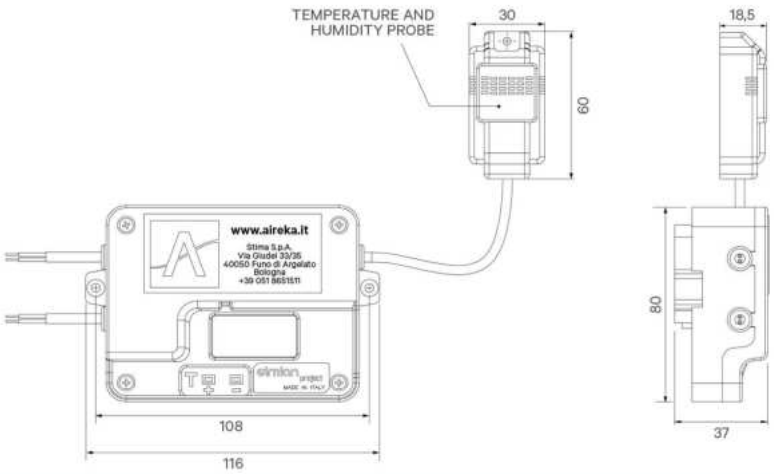
CONTROL UNITS XTRONIC 345 B

PNEUMATIC COOLERS

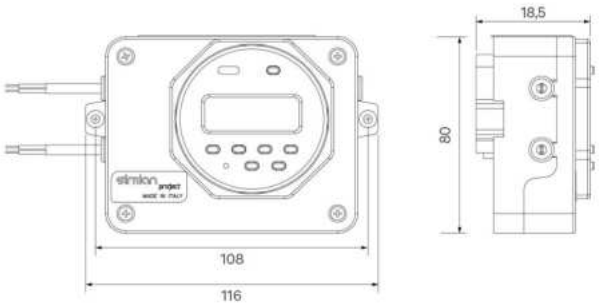
GENERAL FEATURES - XTRONIC 345 B	
Supply voltage	24 V DC
Probe length	1 m
Temperature range	-20°C +60°C
Humidity range	00% 100% RH
Accuracy	0.1°C , 0.1 % RH
Current capacity	max 10 A
Coil voltage and power	24 V - 3.1 W
Electric wires' section	0.75 mm
Supply cable length	1.5 m
Application	Inside cabinets



CONTROL UNITS XTRONIC 345 T

PNEUMATIC COOLERS

GENERAL FEATURES - XTRONIC 345 T	
Supply	24 V DC
Probe length	1 m
Time setting	Weekly / h24
Humidity range	0% - 100% RH
Accuracy	0.1°C , 0.1 % RH
Current capacity	max 10 A
Coil power	24 V - 3.1 W
Electric wires' section	0.75 mm
Application	Inside / outside



EXAMPLES OF INSTALLATION

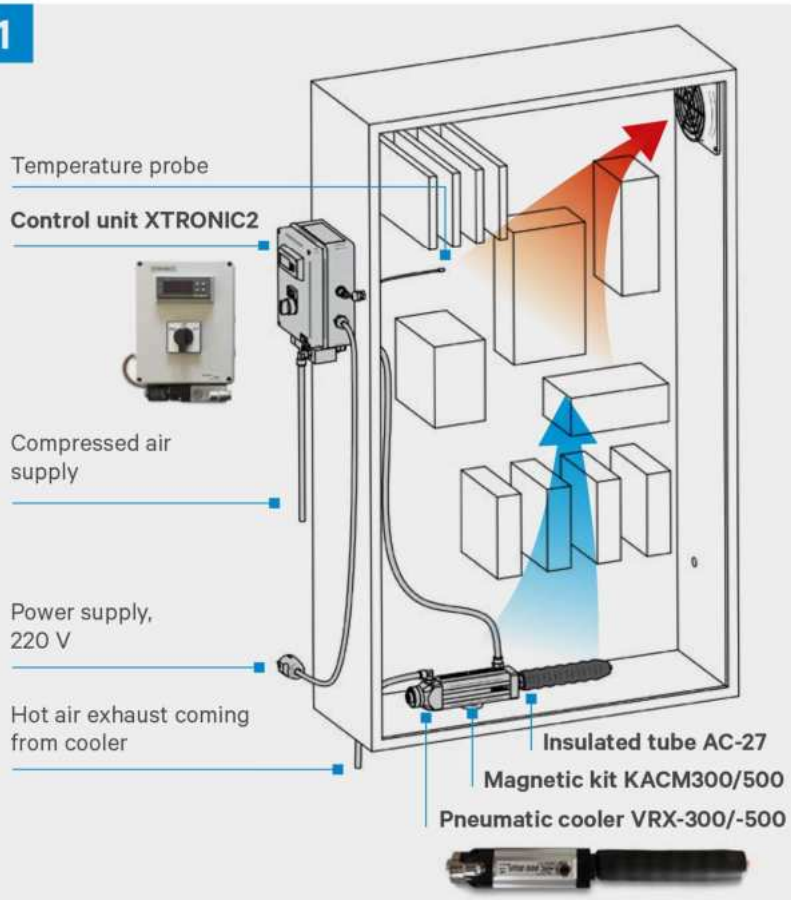
PNEUMATIC COOLERS

The installation of coolers in control cabinets can be of 3 types:

1. **EXTERNAL unit**
   to have the inner temperature of the cabinet displayed directly;
2. **INTERNAL unit**
   so that to have a compact solution;
3. **HYBRID systems** where the pneumatic cooler works in combination with an already existing air conditioning unit.

- Hot air
- Cold air

1



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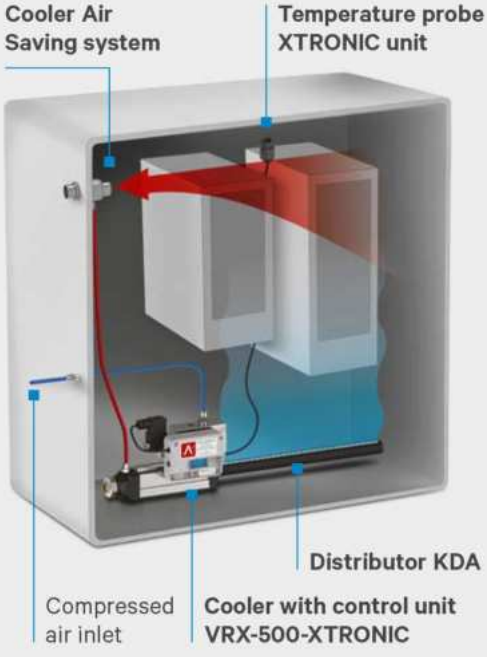

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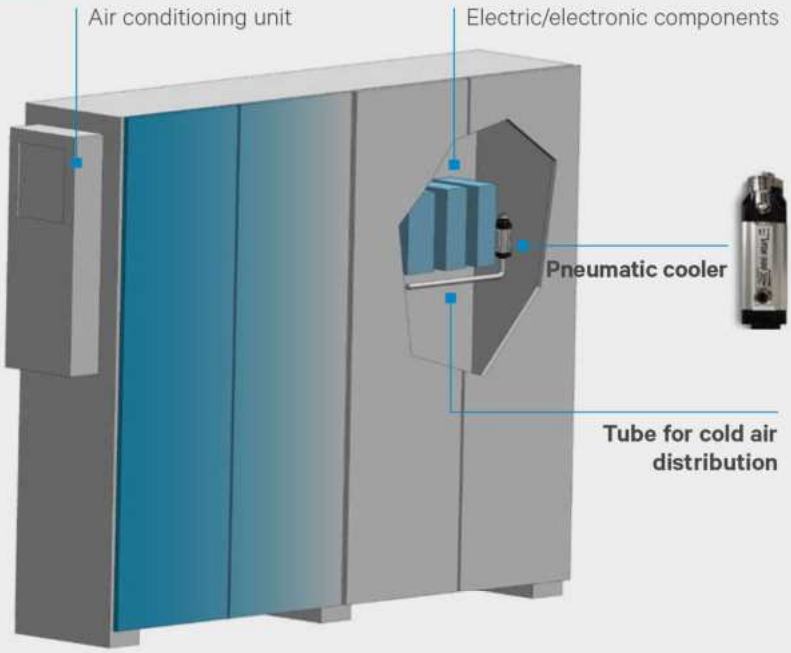

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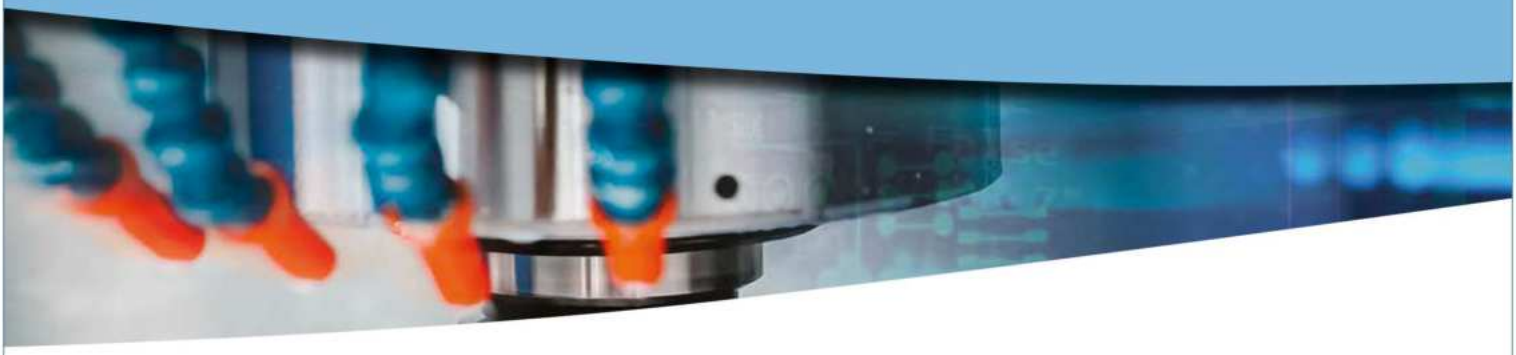
ELECTRONICALLY-CONTROLLED PNEUMATIC COOLERS



STAND-ALONE SERIES

These are pneumatic coolers with temperature-control device, in a single unit. The market increasingly demands stand-alone devices, which are able to function autonomously, based on the parameters of the ambient temperature. Therefore, we designed and developed the **XTRONIC** temperature-control units, which are available both for remote control and installed on pneumatic coolers.

So, it will be enough to place one of these electronically-controlled devices inside the enclosure that has to be cooled, connect the pneumatic hoses and the electric wires, and set the desired temperature range on the display of the unit.

This way, the cooler will start working only when it is necessary, it will maintain the required refrigeration, and it will make it possible to save compressed air and energy.

Our **XTRONIC** control units can be customised too.

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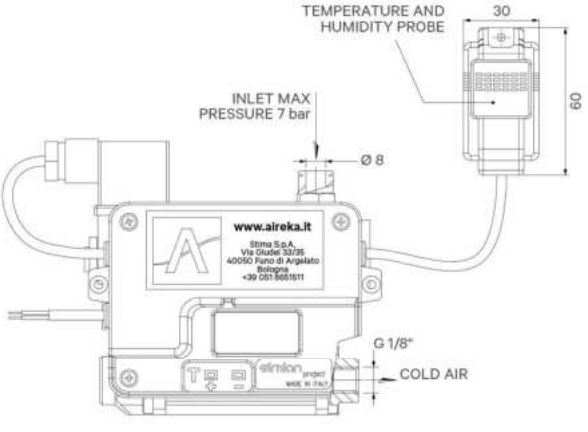
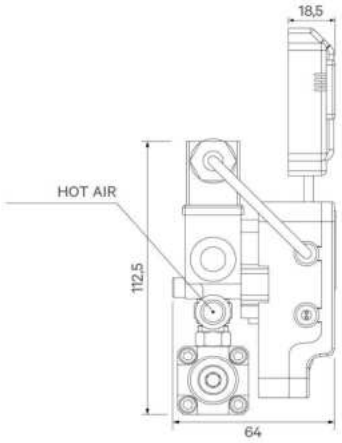
STAND-ALONE SERIES VRX-100-XTRONIC

ELECTRONICALLY-CONTROLLED PNEUMATIC COOLERS

GENERAL FEATURES - VRX-100 XTRONIC	
Supply voltage	24 V DC
Recommended hose	Ø 8x1
Supply pressure	max 7 bar
Cooling power and performances	See VRX-100 (page 21)
Probe length	1 m
Temperature range	-20°C +60°C
Humidity range	00% 100% RH
Accuracy	0.1°C , 0.1 % RH
Current capacity	max 10 A
Coil voltage and power	24 V - 3.1 W
Electric wires' section	0.75 mm
Weight	760 g

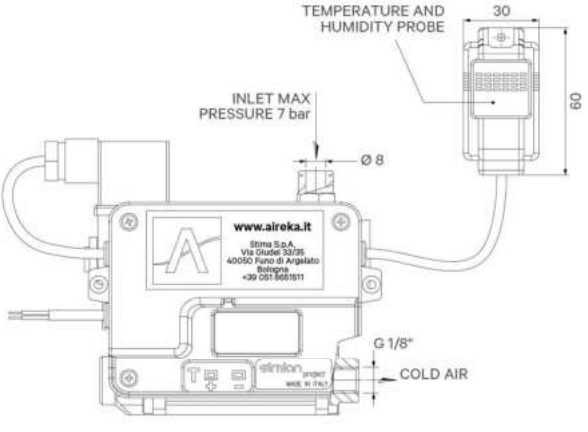


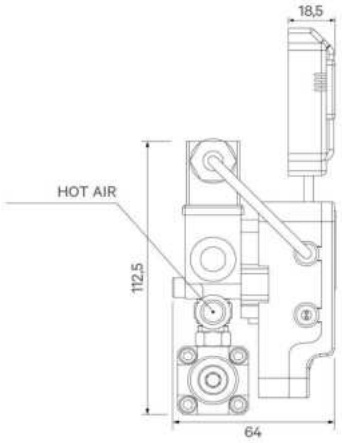


STAND-ALONE SERIES VRX-100-XTRONIC

ELECTRONICALLY-CONTROLLED PNEUMATIC COOLERS

GENERAL FEATURES - VRX-100 XTRONIC	
Supply voltage	24 V DC
Recommended hose	Ø 8x1
Supply pressure	max 7 bar
Cooling power and performances	See VRX-100 (page 21)
Probe length	1 m
Temperature range	-20°C +60°C
Humidity range	00% 100% RH
Accuracy	0.1°C , 0.1 % RH
Current capacity	max 10 A
Coil voltage and power	24 V - 3.1 W
Electric wires' section	0.75 mm
Weight	760 g

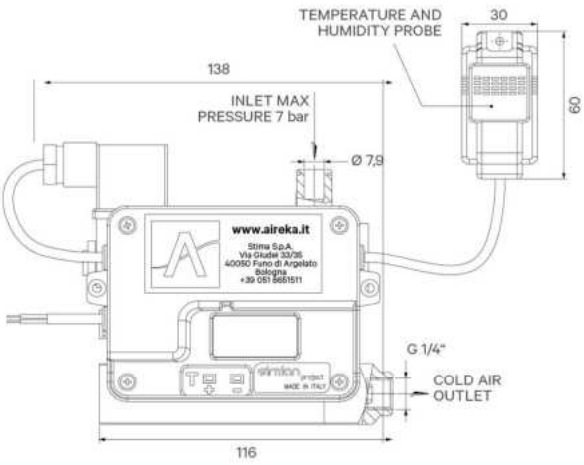


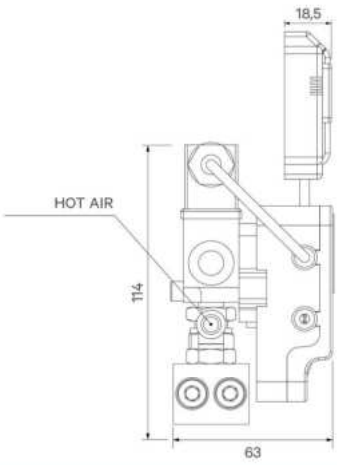


STAND-ALONE SERIES VR-200U-XTRONIC

ELECTRONICALLY-CONTROLLED PNEUMATIC COOLERS

GENERAL FEATURES - VR-200U XTRONIC	
Supply voltage	24 V DC
Recommended hose	Ø 8x1
Supply pressure	max 7 bar
Cooling power and performances	See VR-200U (page 16)
Probe length	1 m
Temperature range	-20°C +60°C
Humidity range	00% 100% RH
Accuracy	0.1°C , 0.1 % RH
Current capacity	max 10 A
Coil voltage and power	24 V - 3.1 W
Electric wires' section	0.75 mm
Weight	770 g

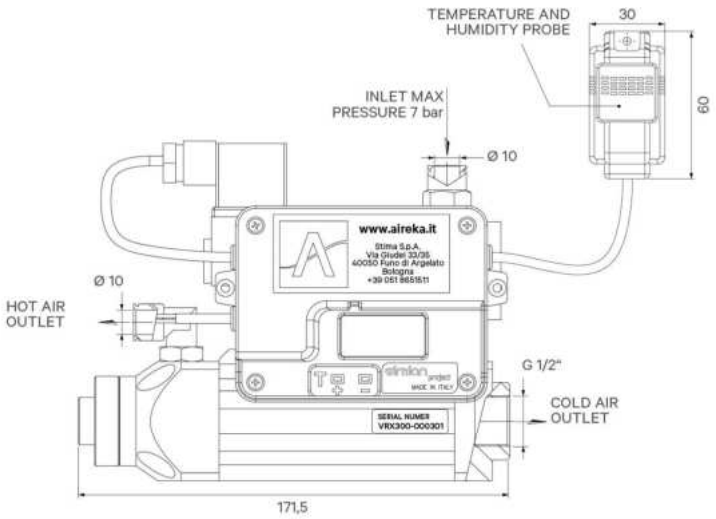


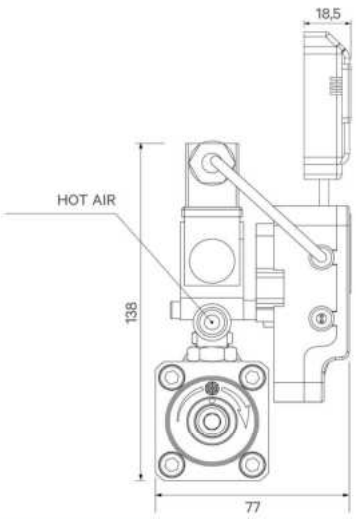


STAND-ALONE SERIES VRX-300 XTRONIC

ELECTRONICALLY-CONTROLLED PNEUMATIC COOLERS

GENERAL FEATURES - **VRX-300 XTRONIC**	
Supply voltage	24 V DC
Recommended hose	Ø 10x1
Supply pressure	max 7 bar
Cooling power and performances	See VRX-300 (page 22)
Probe length	1 m
Temperature range	-20°C +60°C
Humidity range	00% 100% RH
Accuracy	0.1°C , 0.1 % RH
Current capacity	max 10 A
Coil voltage and power	24 V - 3.1W
Electric wires' section	0.75 mm
Weight	1310 g

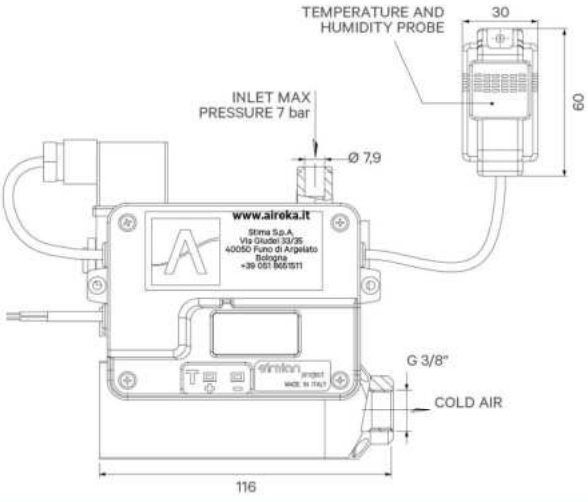


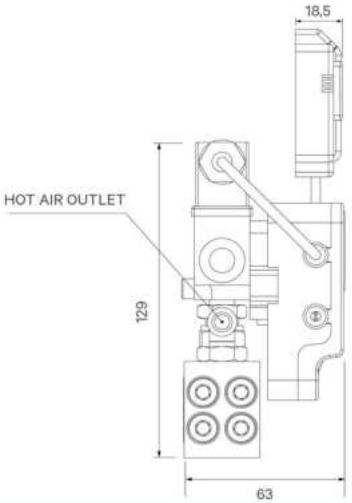


STAND-ALONE SERIES VR-400U-XTRONIC

ELECTRONICALLY-CONTROLLED PNEUMATIC COOLERS

GENERAL FEATURES - **VR-400U XTRONIC**	
Power supply	24 V DC
Recommended hose	Ø 8x1
Supply pressure	max 7 bar
Cooling power and performances	See VR-400U (page 16)
Probe length	1 m
Temperature range	-20°C +60°C
Humidity range	00% 100% RH
Accuracy	0.1°C , 0.1 % RH
Current capacity	max 10 A
Coil voltage and power	24 V - 3.1 W
Electric wires' section	0.75 mm
Weight	845 g

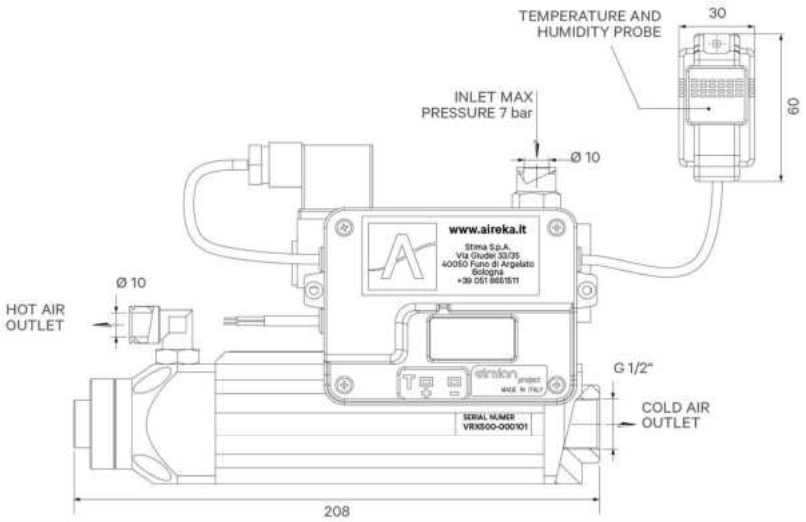


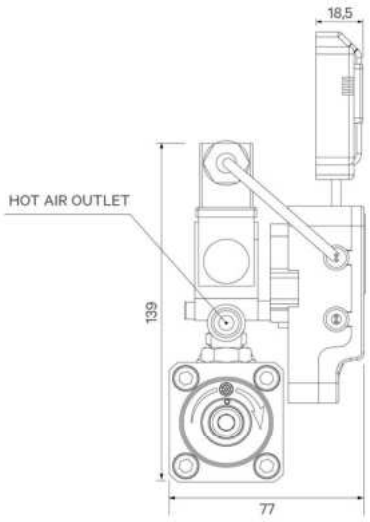


STAND-ALONE SERIES VRX-500 XTRONIC

ELECTRONICALLY-CONTROLLED PNEUMATIC COOLERS

GENERAL FEATURES - VRX-500 XTRONIC	
Supply voltage	24 V DC
Recommended hose	Ø 10x1
Supply pressure	max 7 bar
Cooling power and performances	See VR-400U (pag. 23)
Probe length	1 mt
Temperature range	-20°C +60°C
Humidity range	00% 100% RH
Accuracy	0.1°C , 0.1 % RH
Current capacity	max 10 A
Coil voltage and power	24 V - 3.1 W
Electric wires' section	0.75 mm
Weight	1430 g

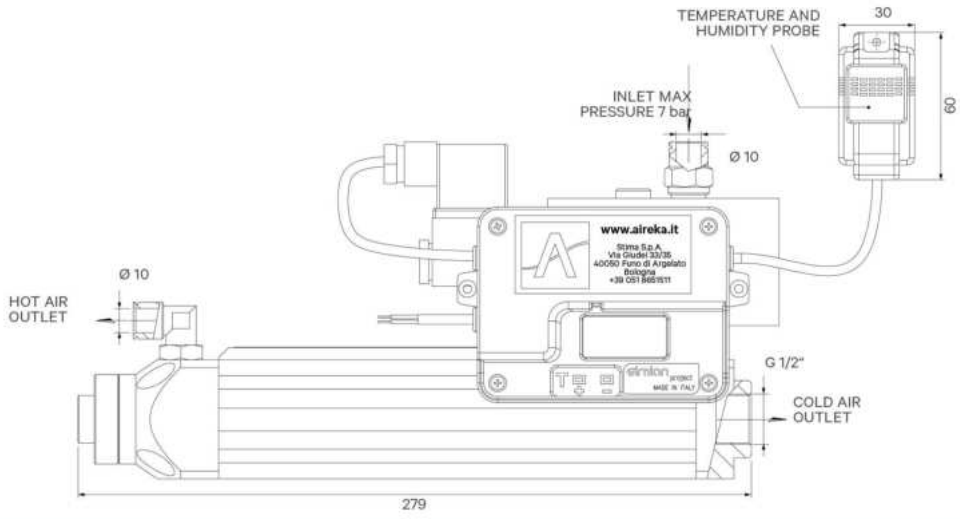


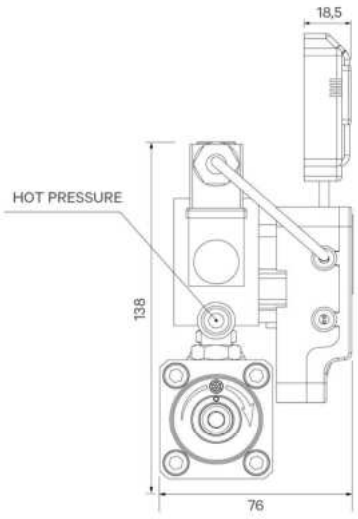


STAND-ALONE SERIES VRX-1000-XTRONIC

ELECTRONICALLY-CONTROLLED PNEUMATIC COOLERS

GENERAL FEATURES - VRX-1000 XTRONIC	
Power supply	24 V DC
Recommended hose	Ø 12x1
Supply pressure	Max 7 bar
Cooling power and performances	Vedi VRX-1000 (pag. 24)
Probe length	1 m
Temperature range	-20°C +60°C
Humidity range	00% 100% RH
Accuracy	0.1°C , 0.1 % RH
Current capacity	max 10 A
Coil voltage and power	24 V - 3.1 W
Electric wires' section	0.75 mm
Weight	1630 g





SPECIAL APPLICATIONS

VRX300 + KDA
HEATER VERSION

VRX500 MOTION
COOLER WITH ADJUSTMENT CONTROLLABLE BY PLC

VRX300 + KDA
WITH DISTRIBUTOR OF COLD AIR

RING-COOLING SYSTEM

KDA
COLD AIR DISTRIBUTOR
ALL LENGTHS AVAILABLE ON REQUEST

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COOLER AIR SAVING
PATENTED SYSTEM

The best practice in cooling down enclosures involves also a correct distribution of the cold air, after it has been produced.

To make it possible, we supply air-blowing modules, connection fittings in technopolymer, and tubes with double insulation.
All this to have zero losses of cold energy and to get the highest effectiveness in your application.

All these accessories are customisable, to meet your specific demands.

Filter against impurities, for the fixation of the hot air extractor

Fittings for cold air distribution

Customisable air-blowing module

Single air-blowing module

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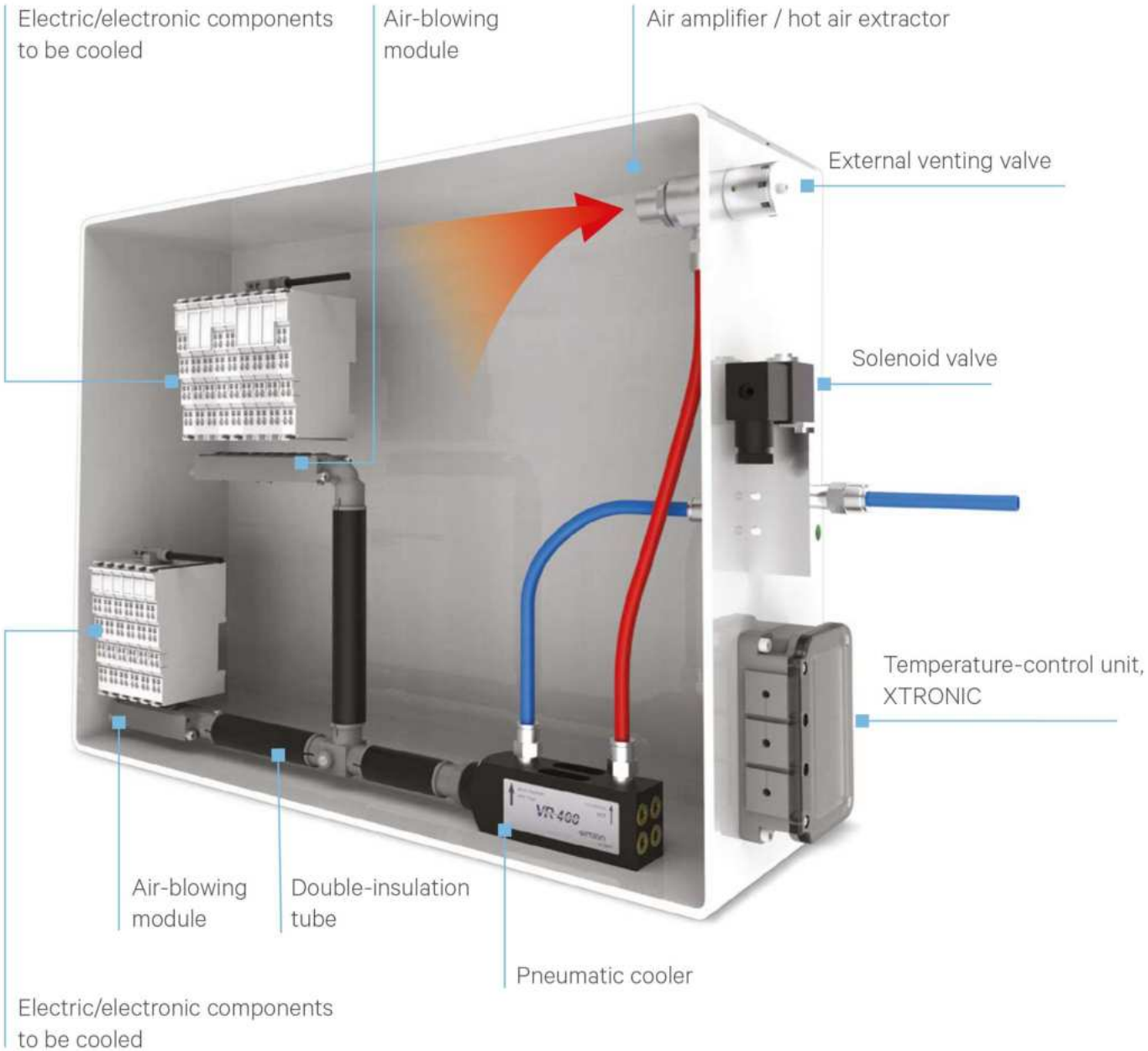

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COOLER AIR SAVING

PATENTED SYSTEM

VR Series coolers and **AM Series** amplifiers used together to introduce cold air and extract hot air from electrical cabinets at the same time, using a single compressed air supply.

- Effective ventilation of the electrical cabinet
- Reduction of compressed air consumption
- Optimisation of cooling results

No matter how much cold air is introduced into an electrical cabinet, the effectiveness and efficiency of cooling will never be optimal unless the hot air generated by the electrical components is properly ventilated at the same time. With ventilation we mean both the creation of convection flows inside the cabinet which effectively distribute the air around the components, and the actual extraction of hot air from the cabinet itself.

By using the Cooler Air Saving patented system by Simian Project, two results are obtained: the first, using the VR Series coolers, is the prompt and precise cooling of the components that heat the cabinet the most. This thanks to the flexibility of installation (brackets and magnets) and the fact that the flow of cold air can be precisely directed on the main heat sources (by using adjustable nozzles). The second result is the proper ventilation of the electrical cabinet, thanks to the extraction power generated by the AM Series air amplifier, which is actuated by the hot air exhausted from the cooler.

The picture shows the system set up inside an electrical cabinet:

The VRX-500 cooler (fig.1) is actuated with compressed air from outside; the flow of cold air is directed, by using adjustable nozzles, on the electrical components that give off the most heat, while the exhaust of hot air is channelled by the red hose (fig. 3) to actuate the AM Series amplifier

The amplifier (fig.2) is mounted on the top right-hand side of the electrical cabinet; the pass-through installation allows it to suction and extract air from the cabinet; in the example of the picture, its position in the upper part of the cabinet ensures that the extraction occurs where most of the hot air accumulates and that even the electrical components located on the opposite side of the source of cold air remain at a temperature suitable for optimal functioning.

Even where pass-through mounting is not possible (for example in the event of installations in cabinets where IP protection must be guaranteed), the

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fitting of the amplifier inside the cabinet ensures forced recycling of air, which eliminates the concentration of hot air in the areas located furthest away from sources of cold air.

The patented system also works well together with industrial air-conditioners in electrical cabinets with the following characteristics:

- Large electrical cabinets where the cold air generated by the air-conditioner has trouble in reaching all parts of the cabinet;
- Electrical cabinets with electrical components laid out in such a way that the convection of air around the components is tricky;
- Electrical cabinets where the heat is generated by a few components that are located far from the area where the air-conditioner introduces the cold air.

N.B.: The Cooler Air Saving system works with VRX-300, VRX-500, and VRX-1000 coolers together with AM-20ES and AM-40ES amplifiers.

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