



RECTAGULAR CAV AIR VOLUME CONTROL TERMINALS

WITH SYSTEM POWERED MECHANICAL REGULATOR

NM | NN TYPE



Composition type designation:

N - M - O - A - O - V - O

N Position 1: **Product group**

O = not applicable

M Position 2: **Function**

O = not applicable
 M = rectangular CAV terminal, single wall construction
 N = rectangular CAV terminal, double wall construction
 1 = non standard, specify separately

O Position 3: **Control**

O = system powered, regulator (standard)
 1 = non standard, specify separately

B Position 4: **Outlet**

O = not applicable
 A = rectangular outlet
 1 = non standard, specify separately

O Position 5: **Reheat coil**

O = without reheat coil
 1 = non standard, specify separately

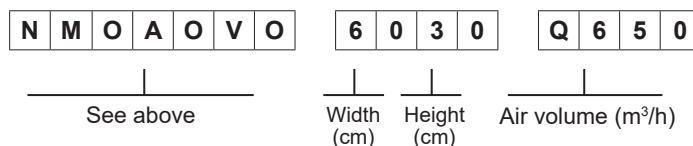
V Position 6: **Controls (type & function)**

O = not applicable
 V = factory set with provision for on-site adjustment across the full volume scale
 1 = non standard, specify separately

O Position 7: **Finish**

O = standard finish (galvanized steel)
 E = epoxy coating
 1 = non standard, specify separately

Ordering example:



Ordering information:

Standard terminals:

- quantity of terminals
- complete 7 digit code
- terminal size or model
- air volume setting (Q)
- control handing (standard right side)

Non standard terminals:

- for non standard terminals a full description and/or drawing are requested

Single wall (type NM)
Double wall (type NN)



Application

NM / NN series rectangular, constant volume terminals with system powered mechanical regulator are designed to keep a constant air flow, independent of the inlet static pressure without the use of a DDC CAV/VAV controller/ actuator. These terminals save commissioning time on site and are suitable either for supply or return air in new or refurbishment projects.

Features:

- Single wall or double wall.
- Pressure independent from 80 – 1000 Pa.
- Compact design.
- Low pressure loss over the terminal.
- Control accuracy $\pm 10\%$ (in the recommended flow range).
- Control accuracy for air volumes below 100 m³/h will be $\pm 10\text{m}^3/\text{h}$.
- Temperature insensitive (-30°C to +100°C).
- Can be mounted in any position.
- Factory set, saves commissioning time on site.
- Provision for on-site adjustment across the full volume scale.
- Maintenance free.
- Low noise production.

Technical information

Casing:

Terminal casing made of galvanized sheet steel (non spiral) with sleeve connection with rubber gasket. Casing leakage rate to Class II VDI 3803 or DIN 24 194. Duct-sleeve connections at the in- and outlet are suitable for DIN 24 145 or DIN 24 146 connections. In case of double wall construction 30 mm insulation material is used completely enclosed by the double wall construction.

Damper:

Damper blade: aluminium.
Damper shaft: stainless steel with self lubricating Nylon bearings.

Controls:

The factory setpoint is indicated on the terminal.

Finish:

- Standard finish galvanized steel.
- Optional finish with epoxy coating is available upon request.

Delivery format

When ordering, the required air volume must be indicated.

Specify as:

Example:

Supply and install, rectangular, pressure independent constant air volume terminals with system powered mechanical regulator; control accuracy $\pm 10\%$ of V_{CAV} . The construction shall be galvanized steel with a casing leakage rate classified according to class II, VDI 3803/ DIN 24 194. The CAV terminals shall have an aluminium damper blade with stainless steel shaft rotating in self lubricating Nylon bearings.

Air volume 360 l/s
Terminal size 300 x 200 mm
Max. pressure loss 60 Pa
Max. discharge sound index < NC35 (@250Pa Δ p)
Max. radiated sound index < NC35 (@250Pa Δ p)

Barcol-Air control type "V", factory set with provision for on-site adjustment across the full volume scale. (Barcol-Air type NMOAOVO).

Ordering example : type – model – airflow (m³/h) = NMOAOVO - 3020 - Q1296 (= 360 l/s)

Manufacturer: Barcol-Air

Single wall (type NM)
Double wall (type NN)



Recommended air volume

Width	Height	Control range per setting (m3/h) *			
150	150	200-250	250-350	300-500	400-700
	100	200-350	300-600		
200	150	250-350	350-550	400-900	
	200	400-650	600-1000		
250	150	300-600	400-900		
	200	400-600	600-800	800-1400	
	250	640-1000	800-1300	1300-2300	
300	100	200-400	300-600	400-800	
	150	400-800	700-1200	1300-1500	
	200	500-1100	1000-1700	1500-2000	
	250	800-1500	1300-2700		
	300	700-1200	1100-2100	2000-3000	
350	150	500-1100			
	200	700-1200	1100-1900	1000-2500	
	250	800-1500	1300-2300	1800-3200	
	300	1500-2200	2000-3000		
400	100	300-600	500-1100		
	150	600-900	900-1300	1000-2000	800-1800
	200	600-900	800-1500	1400-2200	2100-2800
	250	1000-1600	1500-2700	2000-3500	
	270	1500-3500			
	300	1100-1600	1300-2500	1500-3000	2500-4300
	400	1200-3600	3000-5000	4000-5600	
450	200	900-1700	1500-2500		
	250	1000-2000	1300-2500	2200-4000	
	300	1000-1700	1500-2500	2000-4200	3500-4500
500	200	1000-2250	2000-3500		
	250	1300-2500	2000-3600	2500-4300	
	300	1000-2000	1500-3000	2500-4000	3600-5500
	400	2000-4500	4000-7000		
	500	2600-5000	4000-7200	5000-8600	
550	250	1300-2500	2000-4000		
600	200	1000-2500	1500-3500	2500-4500	
	250	1500-3500	2000-5000		
	300	1500-3000	2500-4500	4500-6500	
	400	2000-5000	3000-7000	5000-9000	
	500	3000-7000	4000-10000		
	600	3000-6000	5000-9000	9000-13000	

* The control range per setting is linked to a given/pre-set air volume.
This means that the air flow can be changed within the control range of each setting.

Example: a unit size 200 x 100 mm with an air flow of 250 m3/h has control range of 200-350 m3/h (the CAV unit can still be adjusted within this range).

Single wall (type NM)
Double wall (type NN)



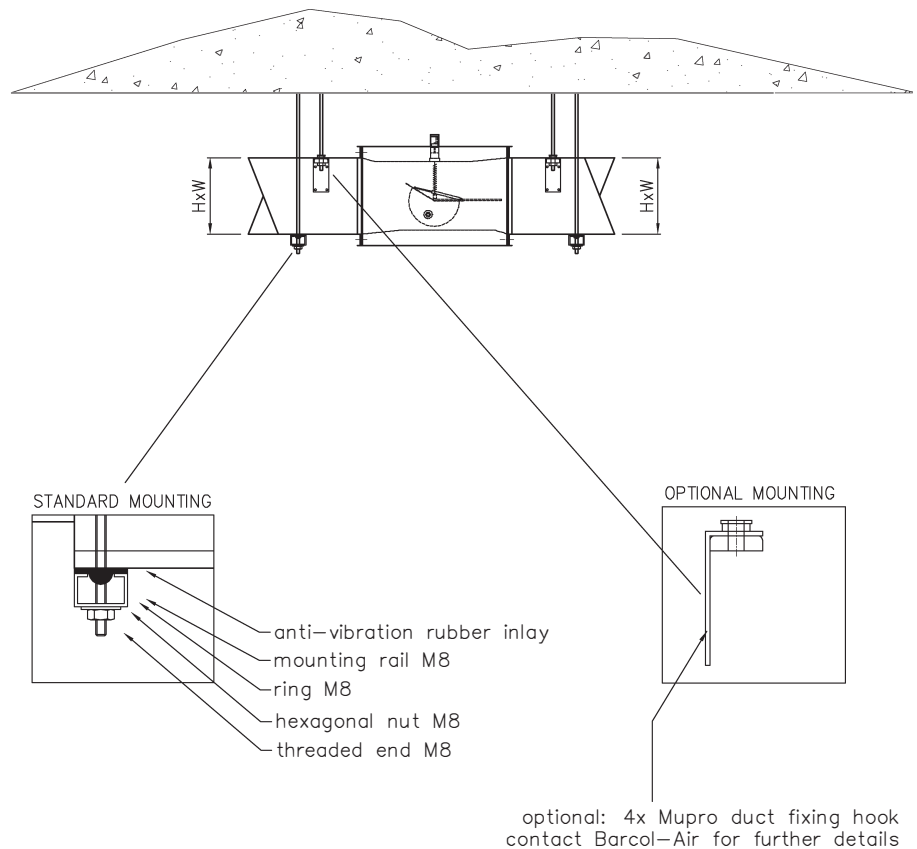
Installation Instructions:

The Barcol-Air CAV terminals shall be installed using at least two support brackets (DIN-rail or L-profile), with anti-vibration rubber under the terminal. Each of these brackets shall be fixed with two threaded rods to the ceiling slab above.

This installation method:

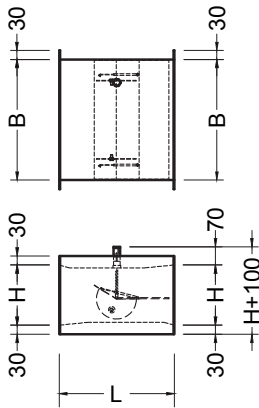
- 1 Shall prevent the body of the CAV terminal from high mechanical tension, which could damage the construction and performance of the terminal.
- 2 Shall prevent torsion on the CAV terminals, which could cause malfunction of the damper blades.
- 3 Provides some flexibility to the final location of the CAV terminals.
- 4 Use at least 1x diagonal straight duct length before the CAV inlet.
- 5 Additional manual volume control dampers (VCD's) before the inlet are not required / recommended!!
6. All connections shall be thermally isolated.

Optional 4 x Mupro fixing hooks can be used (see drawing).

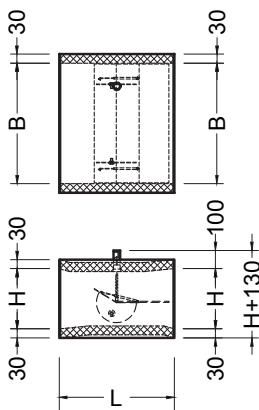


Mounting drawing type NMOAOVO

Single wall (type NM)
Double wall (type NN)



Type NMOAOVO



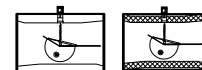
Type NNOAOVO

- Notes:
1. All dimensions in mm
2. L = Installed length
3. Straight duct length = 2,5 x width

Dimensions L (length)

Height (H)	Width (W)									
	150	200	250	300	350	400	450	500	550	600
100	--	220	--	220	--	220	--	--	--	--
150	220	220	220	220	220	--	--	--	--	--
200	--	220	220	220	220	220	385	385	385	385
250	--	--	385	385	385	385	385	385	385	385
300	--	--	--	385	385	385	385	385	385	385
400	--	--	--	--	--	385	--	385	--	385
500	--	--	--	--	--	--	--	425	--	425
600	--	--	--	--	--	--	--	--	--	470

Type NMOAOVO
NNOAOVO



Sound data Δ p = 250 Pa

Model	data referring to inlet spigot				min. Δ Ps	Δ p = 250 Pa																										
						discharge sound						radiated sound single wall						radiated sound double wall														
	air volume					Lw in dB/Oct. (re 1pW)			Lp values			Lw in dB/Oct. (re 1pW)			Lp values			Lw in dB/Oct. (re 1pW)			Lp values											
						125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	dB(A)	NC	NR	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	dB(A)	NC	NR	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	dB(A)	NC	NR
m/s	l/s	CFM	m³/h	dB																												
200 x 100	2,8	56	119	202	68	55	54	52	50	48	45	28	21	24	53	51	48	44	41	37	31	23	26	49	44	36	28	23	19	24	--	--
	6,0	121	256	435	100	61	60	58	57	55	53	34	28	30	59	57	54	51	48	45	37	30	32	55	50	42	35	30	27	30	22	25
	9,7	194	411	698	199	64	63	62	61	59	57	38	31	33	62	60	58	55	52	49	41	34	36	58	53	46	39	34	31	33	26	28
300 x 100	2,0	60	127	216	64	53	52	50	48	45	43	26	--	22	48	46	42	39	34	33	26	--	20	41	36	26	20	-	-	--	--	
	4,7	141	299	508	82	60	59	57	55	53	51	33	27	29	55	53	49	46	42	41	33	26	28	48	43	33	27	20	21	23	--	--
	7,4	222	470	799	132	63	62	61	59	57	55	37	30	32	58	56	53	50	46	45	36	29	31	51	46	37	31	24	25	26	--	20
400 x 100	2,1	84	178	302	66	54	53	51	49	46	43	27	--	23	49	47	43	40	35	33	27	--	22	42	37	27	21	-	-	--	--	
	4,9	196	415	705	86	60	59	58	56	54	52	34	27	29	55	53	50	47	43	42	33	26	28	48	43	34	28	-	-	--	--	
	7,6	304	644	1094	136	64	63	61	60	58	56	37	31	33	59	57	53	51	47	46	37	30	32	52	47	37	32	25	22	27	--	22
150 x 150	3,0	68	143	243	71	56	55	53	51	49	47	29	22	25	54	53	50	47	43	40	33	26	28	50	47	39	33	26	23	26	--	22
	6,0	135	286	486	100	61	60	59	57	55	53	35	28	30	59	58	56	53	49	46	38	31	33	55	52	45	39	32	29	31	24	27
	9,0	203	429	729	175	64	63	62	61	59	57	38	31	33	62	61	59	57	53	50	41	35	37	58	55	48	43	36	33	34	28	30
300 x 150	3,0	135	286	486	71	58	57	55	53	51	48	31	24	27	54	52	49	45	42	37	32	24	27	48	43	35	27	22	-	23	--	--
	6,0	270	572	972	100	64	62	61	59	57	55	37	30	32	60	57	55	51	48	44	38	30	32	54	48	41	33	28	23	29	21	23
	9,0	405	858	1458	175	66	66	64	63	61	59	40	35	37	62	61	58	55	52	48	41	35	37	56	52	44	37	32	27	31	24	27
200 x 200	3,0	120	254	432	71	58	57	55	53	51	48	31	24	27	56	55	52	49	45	41	35	28	30	52	49	41	35	28	24	28	21	24
	6,0	240	508	864	100	64	62	61	59	57	55	37	30	32	62	60	58	55	51	48	41	34	36	58	54	47	41	34	31	34	27	29
	9,0	360	762	1296	175	66	66	64	63	61	59	40	35	37	64	64	61	59	55	52	44	39	40	60	58	50	45	38	35	37	31	33
300 x 200	3,0	180	381	648	71	60	58	56	54	52	49	33	26	28	56	53	50	46	43	38	33	26	28	50	44	36	28	23	17	24	--	--
	6,0	360	762	1296	100	65	64	62	60	58	56	38	33	34	61	59	56	52	49	45	39	33	34	55	50	42	34	29	24	20	22	25
	9,0	540	1144	1944	175	68	67	65	64	62	59	41	36	38	64	62	59	56	53	48	42	36	38	58	53	45	38	33	27	33	26	28
400 x 200	3,0	240	508	864	71	60	59	57	55	52	49	33	27	29	56	54	51	47	43	38	34	27	29	50	45	37	29	23	17	25	--	--
	6,0	480	1016	1728	100	66	64	63	61	59	56	39	33	34	62	59	57	53	50	45	40	33	34	56	50	43	35	30	24	31	24	25
	9,0	720	1525	2592	175	69	68	66	64	62	60	42	37	39	65	63	60	56	53	49	43	37	39	59	54	46	38	33	28	34	27	29
300 x 300	3,0	270	572	972	71	61	59	57	55	53	50	34	27	29	58	55	52	49	45	41	35	28	30	53	47	39	33	26	22	28	--	22
	6,0	540	1144	1944	100	66	65	63	62	59	57	39	34	36	63	61	58	56	51	48	41	35	37	58	53	45	40	32	29	33	26	28
	9,0	810	1715	2916	175	69	68	67	65	63	61	43	37	39	66	64	62	59	55	52	45	39	40	61	56	49	43	36	33	36	30	31
450 x 300	3,0	405	858	1458	71	62	60	58	56	53	51	35	28	30	58	56	52	49	44	41	36	29	31	52	48	38	32	24	21	27	--	23
	6,0	810	1715	2916	100	68	66	65	63	60	58	41	35	37	64	62	59	56	51	48	42	36	38	58	54	45	39	31	28	33	27	29
	9,0	1215	2573	4374	175	71	70	68	66	64	62	44	40	41	67	66	62	59	55	52	46	41	42	61	58	48	42	35	32	37	31	33
600 x 300	3,0	540	1144	1944	71	63	61	59	57	54	51	36	29	31	59	57	53	50	45	41	37	30	32	53	49	39	33	25	21	28	21	24
	6,0	1080	2287	3888	100	68	67	65	63	61	58	41	36	38	64	63	59	56	52	48	43	37	39	58	55	45	39	32	28	34	28	30
	9,0	1620	3431	5832	175	72	70	69	67	65	62	45	40	41	68	66	63	60	56	52	46	41	42	62	58	49	43	36	32	37	31	33
400 x 400	3,0	480	1016	1728	71	63	61	59	57	54	51	36	29	31	60	57	54	51	46	42	37	30	32	55	49	41	35	27	23	30	22	24
	6,0	960	2033	3456	100	68	67	65	63	61	58	41	36	38	65	63	60	57	53	49	43	37	39	60	55	47	41	34	30	35	29	30
	9,0	1440	3049	5184	175	72	70	69	67	65	62	45	40	41	69	66	64	61	57	53	47	41	42	64	58	51	45	38	34	39	34	35
500 x 400	3,0	600	1271	2160	71	64	62	60	58	55	52	39	34	35	60	58	53	50	45	41	42	38	39	54	50	49	33	25	21	31	22	25
	6,0	1200	2541	4320	100	69	68	66	64	61	59	42	37	39	65	64	60	57	52	49	43	39	40	59	56	46	40	32	29	35	29	31
	9,0	1800	3812	6480	175	72	71	69	67	65	63	45	41	42	68	67	63	60	56	53	47	42	43	62	59	49	43	36	33	38	33	34
600 x 400	3,0	720	1525	2592	71	64	62	60	58	55	52	37	30	32	60	58	54	51	46	42	38	31	33	54	50	40	34	26	22	29	22	25
	6,0	1440	3049	5184	100	70	68	66	64	62	59	43	37	39	66	64	60	57	53	49	44	39	40	60	56	46	40	33	29	35	29	31
	9,0	2160	4574	7776	175	73	71	70	68	65	63	46	41	42	69	67	64	61	56	53	47	42	43	63	59	50	44	36	33	38	33	34
500 x 500	3,0	750	1588	2700	71	64	62																									



OUR TECHNOLOGY | YOUR WELLBEING

BARCOL-AIR | AIR DISTRIBUTION

Cantekoogweg 10-12 - 1442 LG Purmerend, The Netherlands

T +31 (0)299 689 300 | **E** export@barcol-air.nl

WWW.BARCOL-AIR.NL