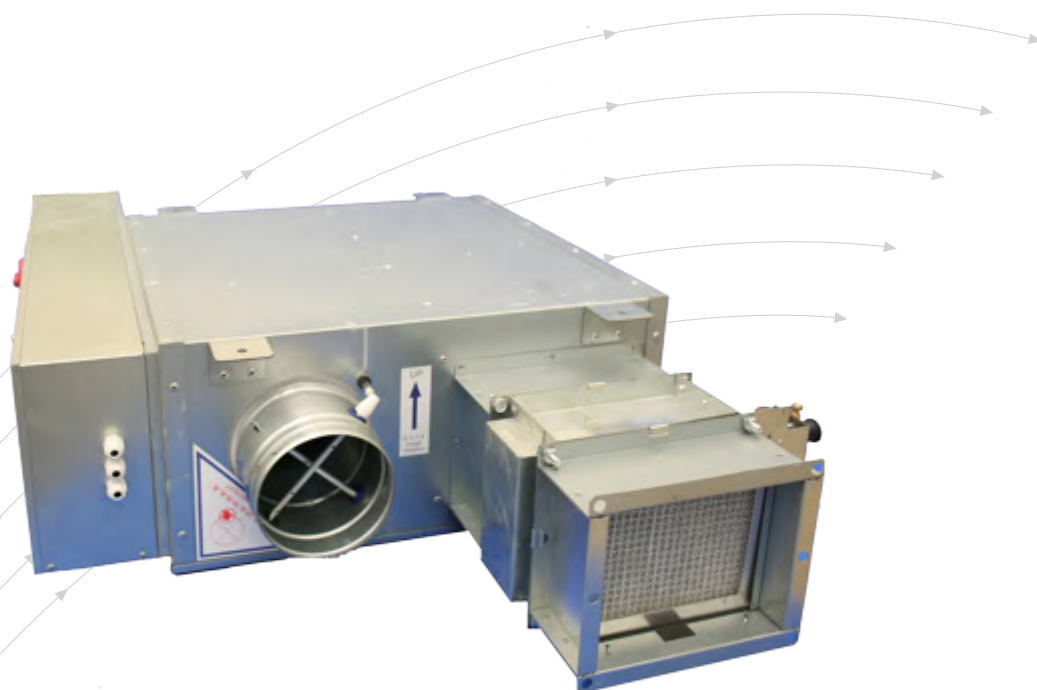


VARYCONTROL Fan Powered VAV Units

TCP (parallel type)



TROX[®] TECHNIK

The art of handling air

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Contents · Description

| | | | |
|------------------------|---|------------------------|----|
| Contents · Description | 2 | Fan acoustic data | 8 |
| Construction | 3 | Fan Performance | 9 |
| Dimensions | 4 | Installation · Control | 10 |
| Selection Data | 5 | Order details | 11 |
| Acoustic data | 6 | | |

Fan powered VAV unit type TCP



The TCP VAV unit is typically used in systems that require perimeter heating in winter of supplementary cooling in certain occupied zones. It consists of two major components, a primary air damper and a secondary air induction indoor fan. A pressure independent control of the primary VAV damper is accomplished by using a differential pressure grid which provides an accurate control of air flow. Mixing between the primary air and the induced warm recirculated air from the ceiling void is achieved by means of a forward-curved centrifugal fan with a direct drive motor. For winter operations, the induction fan provides an economical way of utilizing the recycled heat generated by inner zone. The fan transfers the

recycled heat from inner zone to the perimeter zone utilising the returned air from ceiling void or rooms. Cycling of the fan results in energy savings as activation is only required when required in a specific zone. Placement of the fan is critical to ensure the desired occupant comfort levels.

Hot water coil or electric heater for secondary heating is available.

All controllers or electrical components are factory fitted and VAV controller is factory calibrated.

Constructional features

Casing

- Circular primary air spigot suitable for ducts to DIN 24 145 or DIN 24 146; rectangular secondary and supply air outlets connection
- Mounting brackets for unit support
- Bottom access panel for fan maintenance
- Leakage flow rate to Class II, VDI 3803 or DIN 24 194, Part 2

Volume Control

- DDC
- Primary volume flow range 100% to 10%
- Averaging differential pressure grid with multi-point sensor for accurate measurement
- Working pressure range 20 to 1500 Pa
- Blade airtight seal to DIN EN 1751, class 4
- Factory volume setting and aerodynamic testing of each unit

Fan and Motor

- centrifugal fan with direct drive motor
- alternatively available with AC motor to achieve 3-step regulation for motor speed depending on actual temperature difference signal

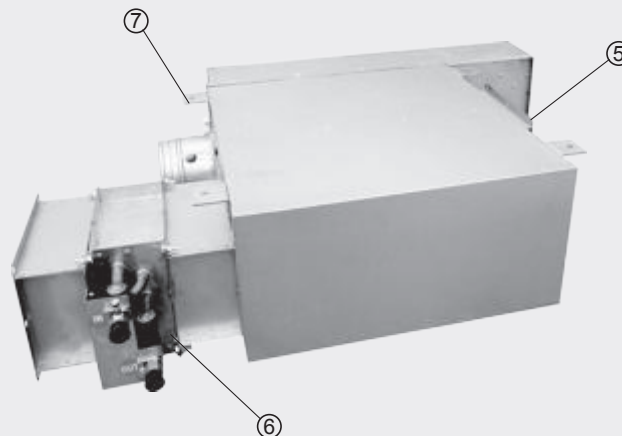
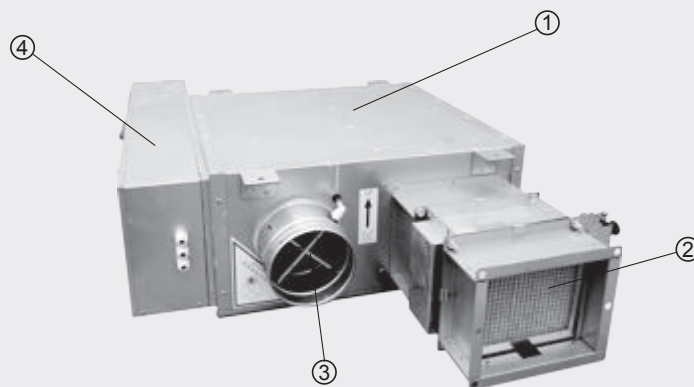
Reheat coil

- for reheat of supply air
- galvanized sheet steel casing, with flanges at both ends
- copper tubes and aluminum fins; one or two row
- factory fitted
- maximum operating pressure 20 bar

Materials

- galvanized sheet steel casing
- casing lined with attenuating glass wool (thickness of 25mm), conforming to Class "O" fire rating
- galvanized sheet steel damper blade with EPDM seal
- aluminium alloy sensor tubes
- polyurethane bearings

Construction

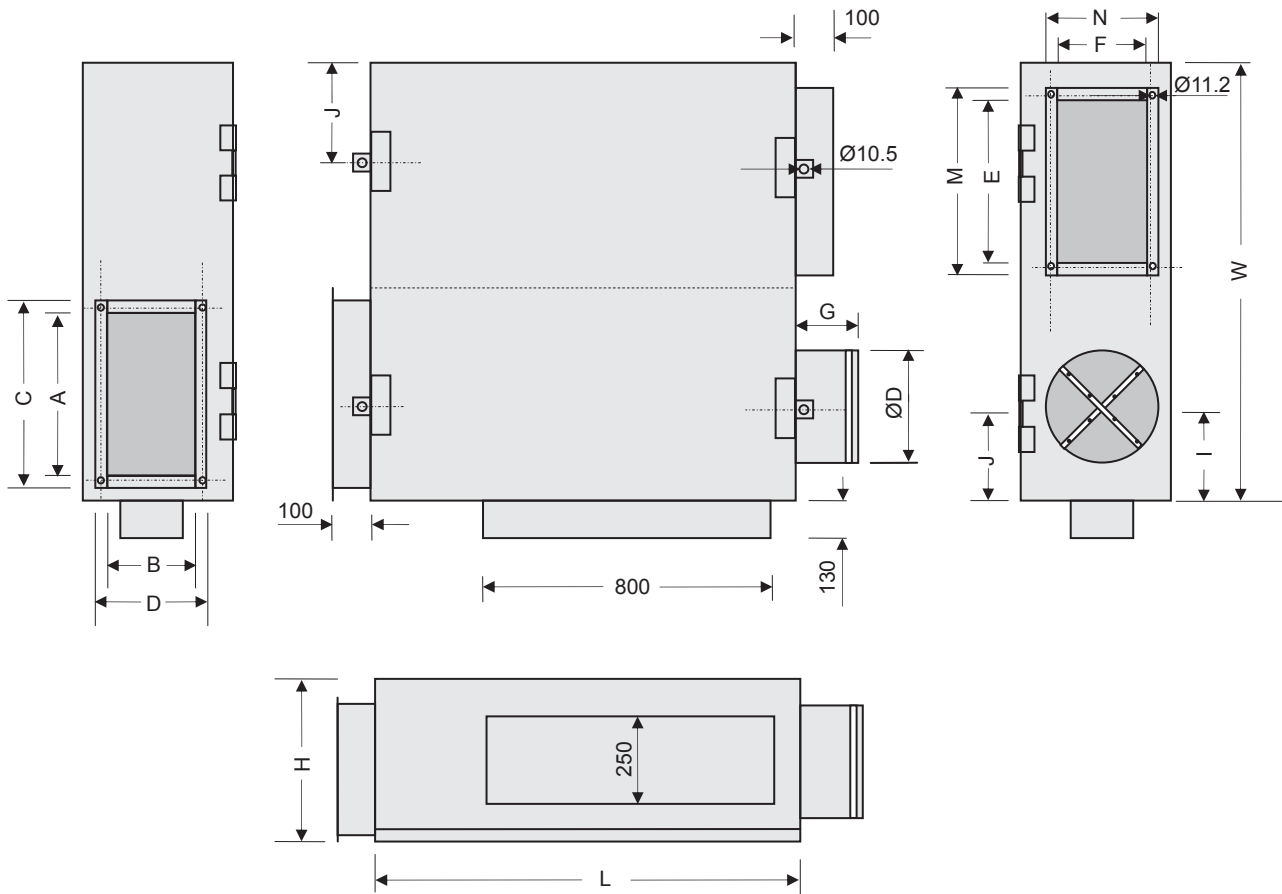


1. Casing
2. Secondary air filter
3. Primary air inlet and damper
4. Electrical connection
5. Supply air outlet
6. Heating coil
7. Mounting brackets

Dimensions

| Unit Size | Damper Size | ØD | A | B | C | D | E | F | M | N | I | J | G | W | H | L |
|-----------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|------|
| 1 | 5 | 124 | 200 | 165 | 240 | 205 | 200 | 165 | 240 | 205 | 150 | 80 | 175 | 600 | 280 | 560 |
| | 6 | 149 | 200 | 165 | 240 | 205 | 200 | 165 | 240 | 205 | 150 | 80 | 175 | 600 | 280 | 560 |
| | 8 | 199 | 200 | 165 | 240 | 205 | 200 | 165 | 240 | 205 | 150 | 80 | 175 | 600 | 280 | 560 |
| 2 | 6 | 149 | 320 | 275 | 360 | 315 | 320 | 275 | 360 | 315 | 150 | 150 | 175 | 840 | 390 | 600 |
| | 8 | 199 | 320 | 275 | 360 | 315 | 320 | 275 | 360 | 315 | 150 | 150 | 175 | 840 | 390 | 600 |
| | 10 | 249 | 320 | 275 | 360 | 315 | 320 | 275 | 360 | 315 | 150 | 150 | 175 | 840 | 390 | 600 |
| 3 | 8 | 199 | 400 | 325 | 440 | 365 | 400 | 325 | 440 | 365 | 200 | 185 | 175 | 1000 | 450 | 750 |
| | 10 | 249 | 400 | 325 | 440 | 365 | 400 | 325 | 440 | 365 | 200 | 185 | 234 | 1000 | 450 | 750 |
| | 12 | 299 | 400 | 325 | 440 | 365 | 400 | 325 | 440 | 365 | 200 | 185 | 234 | 1000 | 450 | 750 |
| 4 | 10 | 249 | 500 | 325 | 540 | 365 | 500 | 325 | 540 | 365 | 250 | 255 | 234 | 1200 | 450 | 950 |
| | 12 | 299 | 500 | 325 | 540 | 365 | 500 | 325 | 540 | 365 | 250 | 255 | 234 | 1200 | 450 | 950 |
| | 14 | 349 | 500 | 325 | 540 | 365 | 500 | 325 | 540 | 365 | 250 | 255 | 234 | 1200 | 450 | 950 |
| 5 | 12 | 299 | 500 | 385 | 540 | 425 | 500 | 385 | 540 | 425 | 250 | 255 | 234 | 1200 | 510 | 1000 |
| | 14 | 349 | 500 | 385 | 540 | 425 | 500 | 385 | 540 | 425 | 250 | 255 | 234 | 1200 | 510 | 1000 |
| | 16 | 399 | 500 | 385 | 540 | 425 | 500 | 385 | 540 | 425 | 250 | 255 | 234 | 1200 | 510 | 1000 |

in mm



Selection Data

Air Flow Ranges and Fan Electrical Data

| TCP Unit Size | | Fanmotor tap | | | Fan Power (W) | max. electrical power input (A) | Power Supply V/ph/Hz |
|------------------|-----------------|--------------|------------|------------|------------------|--|-------------------------|
| | | Low (l/s) | Med. (l/s) | High (l/s) | | | |
| 1 | \dot{V}_{fan} | 55~103 | 83~130 | 97~144 | 60 | 0.7 | 220/1/50 |
| 1-05 | \dot{V}_{pri} | 15~170 | | | | | |
| 1-06 | | 25~240 | | | | | |
| 1-08 | | 40~435 | | | | | |
| 2 | \dot{V}_{fan} | 150~230 | 200~310 | 250~400 | 147 | 1.9 | |
| 2-06 | \dot{V}_{pri} | 25~240 | | | | | |
| 2-08 | | 40~435 | | | | | |
| 2-10 | | 60~690 | | | | | |
| 3 | \dot{V}_{fan} | 300~480 | 400~650 | 500~750 | 245 | 2.5 | |
| 3-08 | \dot{V}_{pri} | 40~435 | | | | | |
| 3-10 | | 60~690 | | | | | |
| 3-12 | | 90~1000 | | | | | |
| 4 | \dot{V}_{fan} | 450~680 | 500~850 | 650~1027 | 550 | 5.2 | |
| 4-10 | \dot{V}_{pri} | 60~690 | | | | | |
| 4-12 | | 90~1000 | | | | | |
| 4-14 | | 130~1375 | | | | | |
| 5 | \dot{V}_{fan} | 681~806 | 722~911 | 778~1250 | 500 | 6.8 | |
| 5-12 | \dot{V}_{pri} | 90~1000 | | | | | |
| 5-14 | | 130~1375 | | | | | |
| 5-16 | | 170~1800 | | | | | |

Note: \dot{V}_{fan} : fan flow rate; \dot{V}_{pri} : primary air flow rate

Aerodynamic Data

| TCP Type | Primary air flow rate ranges and minimum pressure differentials | | | | |
|----------|---|-----|-----|------|------|
| TCP/1-05 | \dot{V} in l/s | 15 | 61 | 107 | 150 |
| | $\Delta P_{st \min}$ in Pa | 20 | 25 | 50 | 85 |
| TCP/1-06 | \dot{V} in l/s | 22 | 87 | 147 | 217 |
| | $\Delta P_{st \min}$ in Pa | 20 | 25 | 45 | 85 |
| TCP/1-08 | \dot{V} in l/s | 40 | 161 | 282 | 405 |
| | $\Delta P_{st \min}$ in Pa | 20 | 25 | 40 | 85 |
| TCP/2-06 | \dot{V} in l/s | 22 | 87 | 147 | 217 |
| | $\Delta P_{st \min}$ in Pa | 20 | 25 | 45 | 60 |
| TCP/2-08 | \dot{V} in l/s | 40 | 161 | 282 | 405 |
| | $\Delta P_{st \min}$ in Pa | 20 | 25 | 40 | 60 |
| TCP/2-10 | \dot{V} in l/s | 60 | 247 | 432 | 615 |
| | $\Delta P_{st \min}$ in Pa | 20 | 25 | 40 | 55 |
| TCP/3-08 | \dot{V} in l/s | 40 | 161 | 282 | 405 |
| | $\Delta P_{st \min}$ in Pa | 20 | 25 | 40 | 55 |
| TCP/3-10 | \dot{V} in l/s | 60 | 247 | 432 | 615 |
| | $\Delta P_{st \min}$ in Pa | 20 | 25 | 40 | 55 |
| TCP/3-12 | \dot{V} in l/s | 92 | 369 | 627 | 924 |
| | $\Delta P_{st \min}$ in Pa | 20 | 20 | 35 | 55 |
| TCP/4-10 | \dot{V} in l/s | 60 | 247 | 432 | 615 |
| | $\Delta P_{st \min}$ in Pa | 20 | 25 | 40 | 55 |
| TCP/4-12 | \dot{V} in l/s | 92 | 369 | 627 | 924 |
| | $\Delta P_{st \min}$ in Pa | 20 | 20 | 35 | 50 |
| TCP/4-14 | \dot{V} in l/s | 126 | 503 | 856 | 1258 |
| | $\Delta P_{st \min}$ in Pa | 20 | 20 | 35 | 50 |
| TCP/5-12 | \dot{V} in l/s | 92 | 369 | 627 | 924 |
| | $\Delta P_{st \min}$ in Pa | 20 | 20 | 35 | 50 |
| TCP/5-14 | \dot{V} in l/s | 126 | 503 | 856 | 1258 |
| | $\Delta P_{st \min}$ in Pa | 20 | 20 | 35 | 50 |
| TCP/5-16 | \dot{V} in l/s | 170 | 671 | 1174 | 1680 |
| | $\Delta P_{st \min}$ in Pa | 20 | 20 | 35 | 50 |

\dot{V} in l/s: Primary air flow rate

$\Delta P_{st \min}$ in Pa: Minimum static pressure differential

Acoustic Data

Primary air damper—discharge sound power level (fan off)

< : < NC15

| TCP Type | Primary air flow l/s | Inlet static pressure Δp_{in} | | | | | | | | | | | | | | | | | | | | |
|----------------------|----------------------------|---------------------------------------|-----|-----|------|------|------|----|--------------------------------|-----|-----|------|------|------|----|--------------------------------|-----|-----|------|------|------|----|
| | | 100 Pa | | | | | | | 200 Pa | | | | | | | 500 Pa | | | | | | |
| | | Octave Sound Power Levels (dB) | | | | | | | Octave Sound Power Levels (dB) | | | | | | | Octave Sound Power Levels (dB) | | | | | | |
| | | 125 | 250 | 500 | 1000 | 2000 | 4000 | NC | 125 | 250 | 500 | 1000 | 2000 | 4000 | NC | 125 | 250 | 500 | 1000 | 2000 | 4000 | NC |
| 1-05 | 15 | 31 | 25 | 20 | 14 | 13 | 12 | < | 36 | 29 | 26 | 20 | 20 | 18 | < | 41 | 35 | 33 | 29 | 28 | 28 | < |
| | 50 | 48 | 44 | 37 | 29 | 27 | 25 | < | 53 | 48 | 43 | 35 | 33 | 32 | < | 58 | 54 | 50 | 43 | 41 | 41 | < |
| | 90 | 54 | 51 | 44 | 34 | 32 | 29 | < | 59 | 55 | 49 | 41 | 38 | 36 | < | 64 | 61 | 56 | 49 | 46 | 45 | 19 |
| | 130 | 58 | 55 | 47 | 38 | 35 | 32 | < | 62 | 60 | 53 | 44 | 41 | 39 | < | 68 | 66 | 60 | 52 | 49 | 48 | 24 |
| | 170 | 61 | 58 | 50 | 40 | 37 | 34 | < | 65 | 63 | 56 | 46 | 43 | 41 | 17 | 71 | 69 | 63 | 54 | 51 | 50 | 28 |
| 1-06 2-06 | 25 | 40 | 34 | 28 | 22 | 21 | 18 | < | 44 | 38 | 34 | 28 | 27 | 25 | < | 50 | 45 | 41 | 36 | 35 | 35 | < |
| | 79 | 51 | 47 | 40 | 32 | 30 | 28 | < | 56 | 52 | 46 | 38 | 36 | 34 | < | 61 | 58 | 53 | 46 | 44 | 44 | 16 |
| | 133 | 57 | 53 | 46 | 37 | 34 | 32 | < | 61 | 58 | 51 | 43 | 40 | 39 | < | 67 | 64 | 59 | 51 | 48 | 48 | 23 |
| | 186 | 60 | 57 | 49 | 40 | 37 | 34 | < | 64 | 62 | 55 | 46 | 43 | 41 | 15 | 70 | 68 | 62 | 54 | 51 | 50 | 27 |
| | 240 | 63 | 60 | 52 | 42 | 39 | 36 | 15 | 67 | 65 | 57 | 48 | 45 | 43 | 19 | 73 | 71 | 65 | 56 | 53 | 52 | 30 |
| 1-08 2-08 3-08 | 40 | 41 | 35 | 29 | 24 | 23 | 21 | < | 46 | 40 | 35 | 30 | 29 | 28 | < | 51 | 46 | 42 | 38 | 37 | 37 | < |
| | 139 | 54 | 50 | 42 | 35 | 33 | 31 | < | 58 | 54 | 48 | 41 | 39 | 38 | < | 64 | 60 | 55 | 49 | 47 | 47 | 19 |
| | 238 | 59 | 56 | 48 | 39 | 37 | 35 | < | 64 | 60 | 53 | 46 | 43 | 42 | 15 | 69 | 67 | 61 | 54 | 51 | 51 | 25 |
| | 336 | 63 | 60 | 52 | 43 | 40 | 38 | 15 | 67 | 65 | 57 | 49 | 46 | 44 | 19 | 73 | 71 | 64 | 57 | 54 | 54 | 30 |
| | 435 | 65 | 63 | 54 | 45 | 42 | 40 | 18 | 70 | 67 | 60 | 51 | 48 | 47 | 23 | 75 | 74 | 67 | 59 | 56 | 56 | 33 |
| 2-10 3-10 4-10 | 60 | 42 | 36 | 30 | 25 | 24 | 23 | < | 46 | 41 | 35 | 31 | 30 | 30 | < | 52 | 47 | 43 | 39 | 38 | 39 | < |
| | 218 | 55 | 51 | 43 | 36 | 35 | 33 | < | 59 | 55 | 49 | 43 | 41 | 40 | < | 65 | 61 | 56 | 51 | 49 | 49 | 21 |
| | 375 | 61 | 57 | 49 | 41 | 39 | 37 | < | 65 | 62 | 54 | 47 | 45 | 44 | 17 | 71 | 68 | 62 | 56 | 53 | 53 | 28 |
| | 533 | 64 | 61 | 52 | 44 | 42 | 40 | 16 | 69 | 66 | 58 | 51 | 48 | 47 | 22 | 74 | 72 | 65 | 59 | 56 | 56 | 31 |
| | 690 | 67 | 64 | 55 | 47 | 44 | 42 | 19 | 71 | 69 | 61 | 53 | 50 | 49 | 24 | 77 | 75 | 68 | 61 | 58 | 58 | 35 |
| 3-12 4-12 5-12 | 90 | 43 | 37 | 30 | 26 | 26 | 24 | < | 47 | 41 | 35 | 32 | 32 | 31 | < | 53 | 47 | 43 | 40 | 40 | 41 | < |
| | 318 | 56 | 51 | 43 | 37 | 36 | 34 | < | 60 | 56 | 49 | 44 | 42 | 41 | < | 66 | 62 | 56 | 52 | 50 | 50 | 22 |
| | 545 | 61 | 57 | 49 | 42 | 41 | 39 | < | 66 | 62 | 54 | 48 | 47 | 46 | 18 | 71 | 68 | 62 | 57 | 55 | 55 | 28 |
| | 773 | 65 | 61 | 52 | 45 | 43 | 41 | 17 | 69 | 66 | 58 | 51 | 50 | 48 | 22 | 75 | 72 | 65 | 60 | 58 | 57 | 33 |
| | 1000 | 67 | 64 | 55 | 48 | 46 | 43 | 19 | 72 | 69 | 61 | 54 | 52 | 50 | 26 | 77 | 75 | 68 | 62 | 60 | 60 | 35 |
| 4-14 5-14 | 130 | 44 | 37 | 30 | 27 | 27 | 26 | < | 48 | 41 | 35 | 33 | 33 | 33 | < | 54 | 47 | 43 | 41 | 41 | 42 | < |
| | 441 | 56 | 51 | 43 | 38 | 37 | 36 | < | 60 | 56 | 48 | 44 | 43 | 43 | < | 66 | 62 | 56 | 52 | 51 | 52 | 22 |
| | 753 | 61 | 57 | 48 | 43 | 42 | 40 | < | 66 | 62 | 54 | 49 | 48 | 47 | 18 | 71 | 68 | 61 | 57 | 56 | 56 | 28 |
| | 1064 | 65 | 61 | 52 | 46 | 44 | 42 | 17 | 69 | 66 | 57 | 52 | 51 | 49 | 22 | 75 | 72 | 65 | 60 | 59 | 59 | 33 |
| | 1375 | 67 | 64 | 55 | 48 | 47 | 45 | 19 | 72 | 69 | 60 | 54 | 53 | 51 | 26 | 77 | 75 | 67 | 62 | 61 | 61 | 35 |
| 5-16 | 170 | 43 | 36 | 29 | 27 | 28 | 27 | < | 47 | 40 | 34 | 33 | 34 | 34 | < | 53 | 47 | 42 | 41 | 42 | 43 | < |
| | 578 | 55 | 50 | 42 | 38 | 38 | 36 | < | 60 | 55 | 47 | 44 | 44 | 43 | < | 65 | 61 | 54 | 52 | 52 | 52 | 21 |
| | 985 | 61 | 56 | 47 | 43 | 42 | 41 | < | 65 | 61 | 53 | 49 | 48 | 47 | 17 | 71 | 67 | 60 | 57 | 56 | 57 | 28 |
| | 1393 | 64 | 60 | 51 | 46 | 45 | 43 | 15 | 69 | 65 | 56 | 52 | 51 | 50 | 22 | 74 | 71 | 64 | 60 | 59 | 59 | 31 |
| | 1800 | 67 | 63 | 53 | 48 | 47 | 45 | 19 | 71 | 68 | 59 | 54 | 53 | 52 | 24 | 77 | 74 | 66 | 62 | 61 | 61 | 35 |

Acoustic Data

Primary air damper — radiated sound power level (fan off)

< : < NC15

| TCP Type | Primary air flow l/s | Inlet static pressure Δp_{in} | | | | | | | | | | | | | | | | | | | | |
|----------------------|----------------------------|---------------------------------------|-----|-----|------|------|------|----|--------------------------------|-----|-----|------|------|------|----|--------------------------------|-----|-----|------|------|------|----|
| | | 100 Pa | | | | | | | 200 Pa | | | | | | | 500 Pa | | | | | | |
| | | Octave Sound Power Levels (dB) | | | | | | | Octave Sound Power Levels (dB) | | | | | | | Octave Sound Power Levels (dB) | | | | | | |
| | | 125 | 250 | 500 | 1000 | 2000 | 4000 | NC | 125 | 250 | 500 | 1000 | 2000 | 4000 | NC | 125 | 250 | 500 | 1000 | 2000 | 4000 | NC |
| 1-05 | 15 | 22 | 24 | 15 | 7 | 2 | -4 | < | 27 | 29 | 21 | 14 | 9 | 4 | < | 34 | 36 | 30 | 23 | 19 | 16 | < |
| | 50 | 39 | 40 | 29 | 20 | 15 | 9 | < | 44 | 45 | 35 | 26 | 23 | 18 | < | 51 | 52 | 43 | 36 | 32 | 29 | < |
| | 90 | 45 | 46 | 34 | 24 | 20 | 14 | < | 50 | 51 | 40 | 31 | 27 | 22 | < | 57 | 58 | 48 | 40 | 37 | 34 | < |
| | 130 | 49 | 50 | 37 | 27 | 23 | 17 | < | 54 | 55 | 43 | 34 | 30 | 25 | < | 60 | 62 | 51 | 43 | 40 | 37 | 18 |
| | 170 | 52 | 52 | 39 | 29 | 25 | 19 | < | 57 | 57 | 45 | 36 | 33 | 27 | < | 63 | 64 | 54 | 45 | 42 | 39 | 21 |
| 1-06 2-06 | 25 | 31 | 31 | 22 | 14 | 9 | 3 | < | 36 | 36 | 28 | 20 | 17 | 12 | < | 42 | 43 | 36 | 30 | 26 | 23 | < |
| | 79 | 43 | 43 | 31 | 22 | 19 | 12 | < | 48 | 48 | 38 | 29 | 26 | 21 | < | 54 | 55 | 46 | 38 | 35 | 32 | < |
| | 133 | 48 | 48 | 36 | 26 | 23 | 16 | < | 53 | 53 | 42 | 33 | 30 | 25 | < | 59 | 60 | 50 | 42 | 40 | 37 | 16 |
| | 186 | 51 | 51 | 38 | 29 | 26 | 19 | < | 56 | 56 | 45 | 36 | 33 | 28 | < | 63 | 63 | 53 | 45 | 42 | 39 | 19 |
| | 240 | 54 | 54 | 41 | 31 | 28 | 21 | < | 59 | 59 | 47 | 38 | 35 | 30 | 15 | 65 | 66 | 55 | 47 | 45 | 41 | 23 |
| 1-08 2-08 3-08 | 40 | 33 | 32 | 23 | 16 | 12 | 6 | < | 38 | 37 | 29 | 23 | 19 | 15 | < | 45 | 44 | 38 | 32 | 29 | 26 | < |
| | 139 | 46 | 44 | 33 | 25 | 22 | 16 | < | 51 | 49 | 40 | 32 | 30 | 25 | < | 57 | 56 | 48 | 41 | 39 | 36 | < |
| | 238 | 51 | 49 | 38 | 29 | 27 | 20 | < | 56 | 54 | 44 | 36 | 34 | 29 | < | 63 | 61 | 53 | 45 | 43 | 41 | 17 |
| | 336 | 55 | 53 | 41 | 32 | 29 | 23 | < | 60 | 58 | 47 | 39 | 37 | 32 | < | 66 | 65 | 55 | 48 | 46 | 43 | 22 |
| | 435 | 57 | 55 | 43 | 34 | 32 | 25 | < | 62 | 60 | 49 | 41 | 39 | 34 | 16 | 69 | 67 | 58 | 50 | 48 | 45 | 24 |
| 2-10 3-10 4-10 | 60 | 35 | 31 | 24 | 17 | 14 | 9 | < | 40 | 36 | 30 | 24 | 22 | 17 | < | 46 | 43 | 39 | 33 | 31 | 29 | < |
| | 218 | 48 | 44 | 35 | 27 | 25 | 19 | < | 53 | 49 | 41 | 34 | 32 | 28 | < | 59 | 56 | 49 | 43 | 42 | 39 | < |
| | 375 | 53 | 49 | 39 | 31 | 29 | 23 | < | 58 | 54 | 45 | 38 | 37 | 32 | < | 65 | 61 | 54 | 47 | 46 | 44 | 17 |
| | 533 | 57 | 53 | 42 | 34 | 32 | 26 | < | 62 | 58 | 48 | 41 | 40 | 35 | < | 68 | 65 | 57 | 50 | 49 | 46 | 22 |
| | 690 | 59 | 55 | 44 | 36 | 34 | 28 | < | 64 | 60 | 50 | 43 | 42 | 37 | 16 | 71 | 67 | 59 | 52 | 51 | 48 | 24 |
| 3-12 4-12 5-12 | 90 | 36 | 31 | 25 | 19 | 17 | 11 | < | 41 | 36 | 31 | 26 | 24 | 20 | < | 48 | 43 | 39 | 35 | 34 | 31 | < |
| | 318 | 49 | 43 | 35 | 29 | 27 | 21 | < | 54 | 48 | 42 | 35 | 34 | 30 | < | 60 | 55 | 50 | 45 | 44 | 42 | < |
| | 545 | 54 | 49 | 40 | 33 | 31 | 26 | < | 59 | 54 | 46 | 40 | 39 | 34 | < | 66 | 61 | 54 | 49 | 48 | 46 | 17 |
| | 773 | 58 | 52 | 43 | 35 | 34 | 29 | < | 63 | 57 | 49 | 42 | 42 | 37 | < | 69 | 64 | 57 | 51 | 51 | 49 | 21 |
| | 1000 | 61 | 55 | 45 | 37 | 36 | 31 | < | 65 | 60 | 51 | 44 | 44 | 39 | 16 | 72 | 67 | 59 | 53 | 53 | 51 | 24 |
| 4-14 5-14 | 130 | 37 | 30 | 25 | 20 | 19 | 14 | < | 42 | 35 | 32 | 27 | 26 | 22 | < | 49 | 42 | 40 | 36 | 36 | 34 | < |
| | 441 | 50 | 42 | 35 | 30 | 29 | 23 | < | 55 | 47 | 42 | 37 | 36 | 32 | < | 61 | 54 | 50 | 46 | 46 | 44 | < |
| | 753 | 55 | 47 | 40 | 34 | 33 | 28 | < | 60 | 53 | 46 | 41 | 40 | 36 | < | 67 | 59 | 54 | 50 | 50 | 48 | 18 |
| | 1064 | 59 | 51 | 43 | 36 | 36 | 30 | < | 64 | 56 | 49 | 43 | 43 | 39 | < | 70 | 63 | 57 | 52 | 53 | 51 | 22 |
| | 1375 | 61 | 53 | 45 | 38 | 38 | 33 | < | 66 | 59 | 51 | 45 | 45 | 41 | 17 | 73 | 65 | 59 | 54 | 55 | 53 | 26 |
| 5-16 | 170 | 38 | 28 | 25 | 21 | 20 | 15 | < | 42 | 34 | 31 | 28 | 27 | 24 | < | 49 | 40 | 40 | 37 | 37 | 35 | < |
| | 578 | 50 | 41 | 35 | 30 | 30 | 25 | < | 55 | 46 | 41 | 37 | 37 | 34 | < | 61 | 53 | 50 | 46 | 47 | 45 | < |
| | 985 | 55 | 46 | 40 | 34 | 34 | 29 | < | 60 | 51 | 46 | 41 | 42 | 38 | < | 67 | 58 | 54 | 50 | 51 | 49 | 18 |
| | 1393 | 59 | 49 | 42 | 37 | 37 | 32 | < | 64 | 54 | 49 | 44 | 44 | 41 | < | 70 | 61 | 57 | 53 | 54 | 52 | 22 |
| | 1800 | 61 | 52 | 45 | 39 | 39 | 34 | < | 66 | 57 | 51 | 46 | 47 | 43 | 17 | 73 | 64 | 59 | 55 | 56 | 54 | 26 |

Fan Acoustic Data

Fan only

< : < NC15

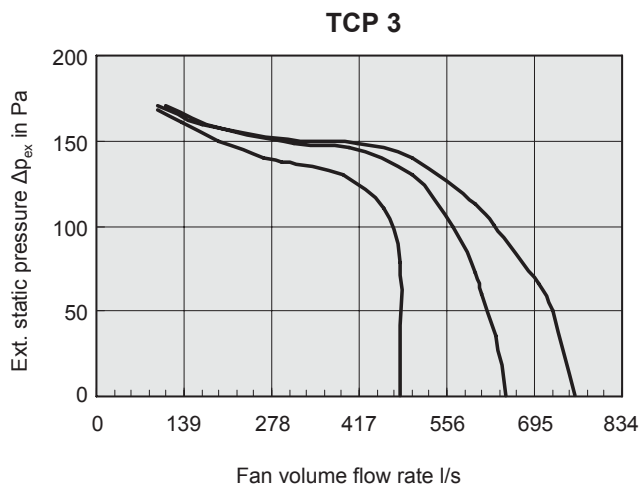
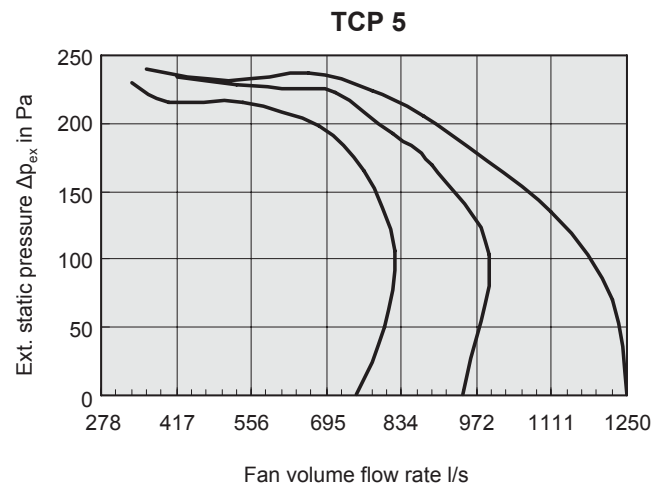
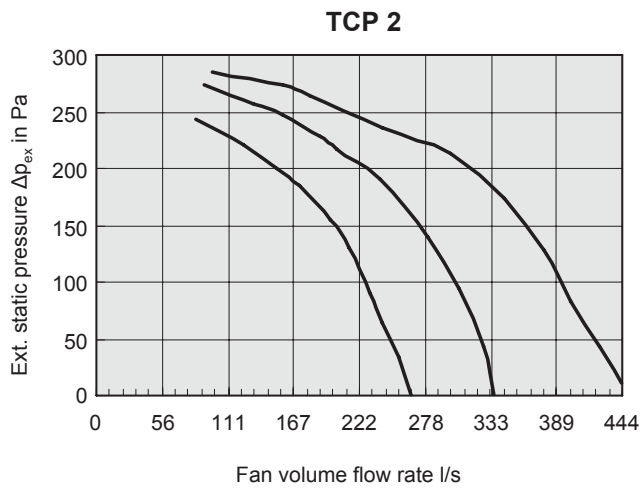
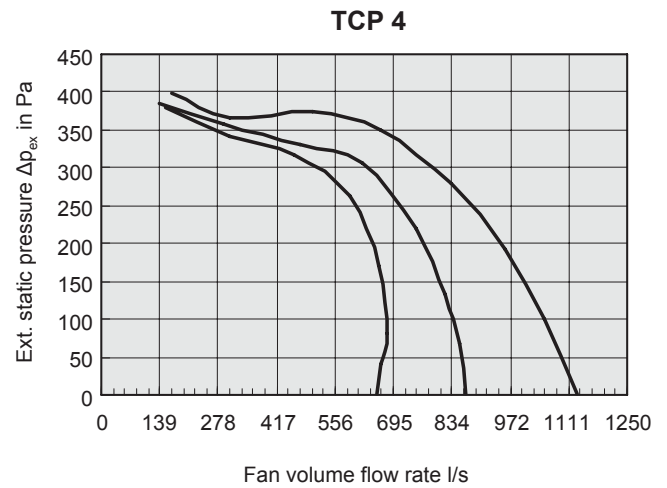
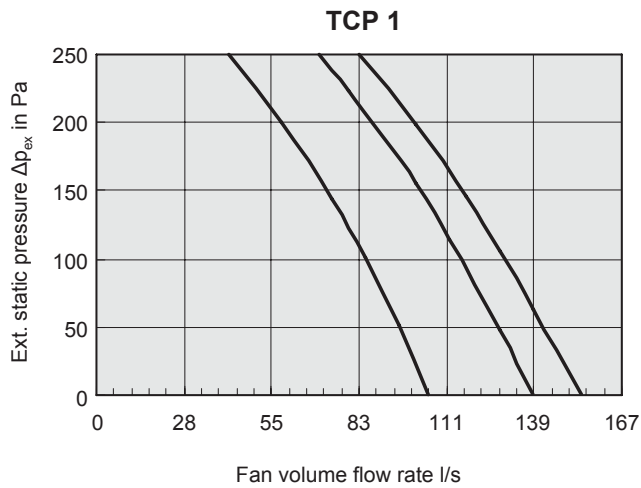
| TCP Type | Fan flow rate l/s | Radiated Noise | | | | | | | Discharge Noise | | | | | | |
|----------|----------------------|--------------------------------|-----|-----|------|------|------|----|--------------------------------|-----|-----|------|------|------|----|
| | | Octave Sound Power Levels (dB) | | | | | | | Octave Sound Power Levels (dB) | | | | | | |
| | | 125 | 250 | 500 | 1000 | 2000 | 4000 | NC | 125 | 250 | 500 | 1000 | 2000 | 4000 | NC |
| 1 | 96 | 59 | 54 | 48 | 46 | 45 | 43 | < | 62 | 53 | 44 | 44 | 37 | 36 | < |
| | 128 | 62 | 57 | 52 | 50 | 49 | 48 | 18 | 66 | 58 | 49 | 48 | 43 | 43 | < |
| | 142 | 63 | 59 | 54 | 52 | 51 | 51 | 20 | 68 | 60 | 51 | 50 | 46 | 46 | < |
| 2 | 248 | 62 | 56 | 51 | 53 | 53 | 50 | 19 | 65 | 55 | 48 | 47 | 46 | 43 | < |
| | 313 | 65 | 59 | 53 | 55 | 56 | 54 | 22 | 68 | 59 | 52 | 51 | 50 | 48 | < |
| | 361 | 66 | 61 | 55 | 57 | 59 | 55 | 24 | 70 | 62 | 55 | 54 | 53 | 52 | 15 |
| 3 | 513 | 62 | 59 | 55 | 54 | 54 | 51 | 21 | 66 | 59 | 55 | 52 | 50 | 50 | < |
| | 536 | 62 | 60 | 56 | 55 | 55 | 52 | 22 | 67 | 60 | 56 | 53 | 51 | 51 | < |
| | 565 | 63 | 61 | 56 | 56 | 55 | 52 | 22 | 68 | 63 | 58 | 55 | 53 | 53 | < |
| 4 | 667 | 67 | 63 | 59 | 59 | 59 | 58 | 26 | 66 | 62 | 60 | 56 | 55 | 57 | < |
| | 811 | 70 | 67 | 61 | 63 | 63 | 62 | 29 | 71 | 67 | 64 | 61 | 60 | 62 | 19 |
| | 919 | 72 | 70 | 64 | 66 | 66 | 66 | 33 | 73 | 70 | 67 | 65 | 64 | 66 | 22 |
| 5 | 785 | 66 | 64 | 58 | 58 | 59 | 57 | 25 | 67 | 61 | 59 | 55 | 53 | 53 | < |
| | 854 | 67 | 65 | 58 | 59 | 60 | 58 | 26 | 69 | 63 | 61 | 58 | 56 | 56 | 15 |
| | 894 | 68 | 66 | 59 | 60 | 61 | 59 | 27 | 71 | 65 | 63 | 59 | 58 | 57 | 17 |

Note:

Test data are obtained in accordance with AHRI Standard 880 for Air Terminals.

Fan Performance

The fan performance curves indicate the effective operating ranges of TCP fan powered VAV units.



Installation - Control principle

Installation

The TCP unit should be installed with suitable support rods and anti vibration mountings.

When installed in the inner zone, the units could fully utilise the recycled warm air via the ceiling void from the inner zone by transferring the warmer air from the inner zone to the peripheral zone for heating requirements in the winter.

Attention:

- It is important that the unit is installed utilising support rods and anti vibration mountings. Do not support the unit from the ceiling grid support framework.
- The distance from electric connection enclosure to the wall should be at least 0.5 m to ensure enough space for on site wiring and maintenance and enough space for the opening of inspection panel.

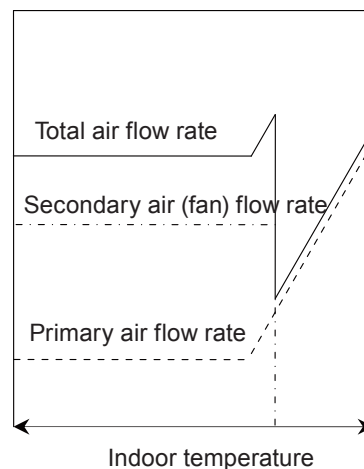
- Wiring of unit power supply, actuator (if installed), controller communication as well as wiring of the controller must be undertaken by a qualified technician.
- Changing of the wiring in the electric wiring enclosure is prohibited, local bylaws and wiring shall be strictly observed.

Control principle

TROX TCP is provided with DDC controller which adjusts the primary air flow rate based on indoor load change. The primary volume flow control range is 100% to 10%.

Meanwhile, for the TCP equipped with AC motor, its DDC controller could manage on/off of the fan according to indoor load change.

| Fan air supply | | |
|-------------------------|------------------|----------------------------------|
| min. primary air+reheat | min. primary air | Variable primary air for cooling |



TCP Control principle

Order details

Specification text

Fan powered units with VAV primary air control providing large regulation range by use of a multi-point air velocity sensor. Induction of warm air from the ceiling void or the room by forward curved centrifugal fan with a direct drive motor. Reheat coils are available if required.

Material

Galvanized sheet steel casing with internally lined insulation material. Multi-point air velocity sensor constructed from aluminium tubes. Fan impeller from aluminium alloy or steel according to different sizes.

Order details

TCP - 2 H - R / 2 - 10 / HM0 / 220-370-100 l/s

Product type
TCP

Rows or levels of reheat

Reheat

| | |
|-----------------------|---|
| Hot water reheat coil | H |
| Electric heater | E |

Filter

| | |
|------------|---|
| Throwaway | C |
| Metal mesh | R |

| Unit Size | Primary air damper Size |
|-----------|-------------------------|
| 1 | 05 |
| | 06 |
| | 08 |
| 2 | 06 |
| | 08 |
| 3 | 08 |
| | 10 |
| | 12 |
| 4 | 10 |
| | 12 |
| | 14 |
| 5 | 12 |
| | 14 |
| | 16 |

Air volume unit

min. primary air volume

max. primary air volume

max. fan volume

Controller code

Order example:

Make: TROX

Type: TCP-H-R/2-10/HM0/200-370-100 l/s