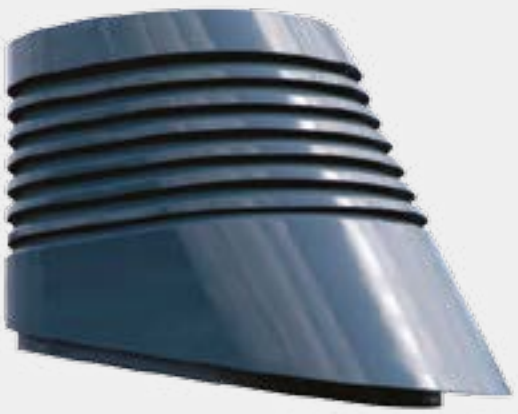


BMS Information - WINDCATCHER Classic

A Building Management System (BMS) is a control system that can be used to monitor and manage the mechanical, electrical and electromechanical services within a facility.

In its most basic form, a BMS consists of software, a server with a database and smart sensors connected to an internet-capable network. The smart sensors situated throughout the building will gather data and send it to the BMS, where it is then stored in a database.

The data collected can then be used to control a number of different aspects of the building; including power, heating, ventilation and air-conditioning, etc. This makes connecting a Monodraught control system to a BMS very useful as it will allow for a Monodraught Natural Ventilation or Cooling product to be automatically controlled, dependant on pre-defined conditions.

When using the WINDCATCHER® Classic to Naturally Ventilate a space, a WINDCATCHER wall controller can be connected to the BMS to provide temperature, override and optional CO_2 information. This will allows the WINDCATCHER system to be controlled in order to create a comfortable and healthy environment by means of expelling stale air from the room and supplying fresh air from outside.

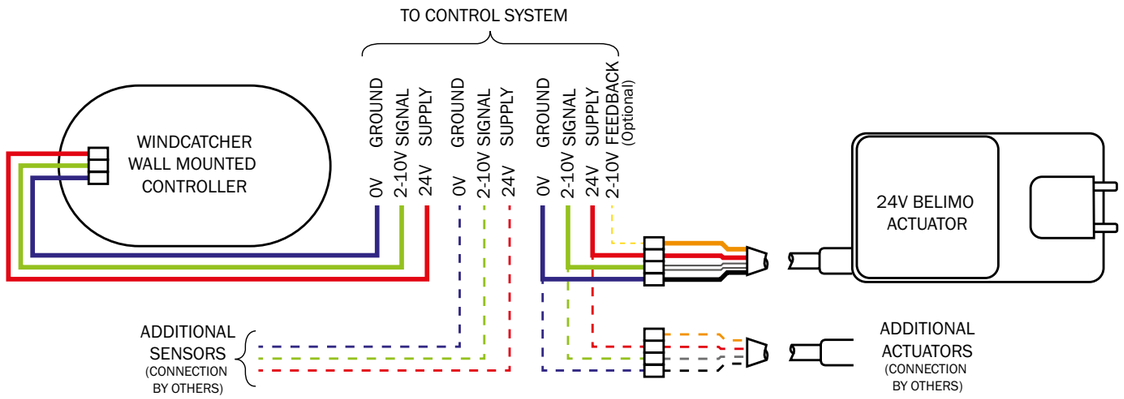
The Monodraught WINDCATCHER wall mounted controller can be connected to the BMS via a three core cable (16-2-3A. RS: 660-4087 or Farnell 1190282) as follows:

Red	24V DC
Green	0 - 10V signal (conveying Temperature, Override and optional CO_2 information)
Blue	0V DC

WINDCATCHER Controller

1. **Open Button:** Sends a signal to the control system (output > 9.2V) to open the damper fully for a 20 minute period. After the 20 minute period the system reverts back to Normal operation/ Automatic Mode.
2. **Normal Button:** Reverts the system back to automatic mode cancelling any override before the timer expires.
3. **Close Button:** Sends a signal to the control system (output < 0.5V) to close the damper fully for a 20 minute period. After the 20 minute period the system reverts back to Normal operation/ Automatic Mode.
4. **CO_2 Sensor (Optional):** When the CO_2 level in the area goes above 1500 ppm the output signal will be in the region of 8.5 - 9.2V until the level in the space falls below 1300 ppm.
5. **Temperature Sensor:** When override or CO_2 is not being communicated to the controls the 0.5 - 8.5V signal represents 10 - 26°C.
   The Override time can be set to 20 minutes, 1 hour or 3 hours.

Wiring Details



Cable Specification

3-Core Cable:
- PVC Cable
  - Farnell: 2240119
  - RS: 660-4087
  - Elec. Wholesaler: 16-2-3A
  - CSA: 0.5mm² (Stranded)
- LSZH Cable
  - Elec. Wholesaler: 1896L
  - CSA: 0.5mm² (Stranded)

4-Core Cable (Optional):
- PVC Cable
  - Farnell: 2240121
  - RS: 660-4096
  - Elec. Wholesaler: 16-2-4A
  - CSA: 0.5mm² (Stranded)
- LSZH Cable
  - Elec. Wholesaler: 1896/4L
  - CSA: 0.5mm² (Stranded)

info@monodraught.com / +44 (0)1494 897700

Damper Actuator Connection

A second three core cable (16-2-3A. RS: 660-4087 or Farnell 1190282) should be run from the BMS to the Belimo actuator fitted to the WINDCATCHER as follows:

Red	24V DC. (Red on Belimo)
Green	2-10V output (white on Belimo)
Blue	0V DC (Black on Belimo)

Note: If it is required to monitor the Belimo motors actual position a four core cable can be used (16-2-4A. RS: 660-4096 or Farnell 1190286) the yellow core can then be connected to the 2-10V feedback (orange) cable.

Damper Control Strategy

The WINDCATCHER Damper should be controlled according to the following strategy.

Season	Spring	Summer	Autumn	Winter
Start Date	01 March	01 June	01 September	01 December
Finish Date	31 May	30 August	30 November	Last Day of Feb
Zone Temperature	Damper Output			
Up to 16°C	Dampers Closed	Dampers Closed	Dampers Closed	Dampers Closed
At 17°C		Dampers Open 20%		
At 18°C		Dampers Open 40%		
At 19°C		Dampers Open 60%		
At 20°C	Dampers Open 20%	Dampers Open 80%	Dampers Open 20%	
At 21°C	Dampers Open 40%	Dampers Fully Open	Dampers Open 40%	
At 22°C	Dampers Open 60%		Dampers Open 60%	Dampers Open 10%
At 23°C	Dampers Open 80%		Dampers Open 80%	Dampers Open 20%
At 24°C	Dampers Fully Open		Dampers Fully Open	Dampers Open 30%
At 25°C				Dampers Open 40%
At 26°C				Dampers Open 50%
Night Time Cooling	✗	✓	✗	✗

Note: During the summer season between the hours of midnight and 6:00 am the system should be programmed to open the dampers in all zones where the measured temperature is > 16°C. This night time cooling mode pre-cools the space ready for the next day and reduced the peak temperature for the following day.

CO_2 Control (Requires Controller within the zone to have integrated CO_2 sensor): If the CO_2 trip voltage is received from the controller the system should open the dampers by an additional 20% from the current setting. While this voltage is still present the damper position should be increased by 20% every 5 minutes (10% in winter).

Override Control: Override voltages should be echoed to the damper motor as long as a higher priority input (e.g. Heat/Fire) is not being exerted to the system.

Rain: The dampers should be closed in the event of rain to reduce the chance of rain ingress.

info@monodraught.com / +44 (0)1494 897700

Halifax House, High Wycombe
Buckinghamshire, HP12 3SE

+44 01494 897700

+44 01494 532465

www.monodraught.com

info@monodraught.com

Monodraught Ltd

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