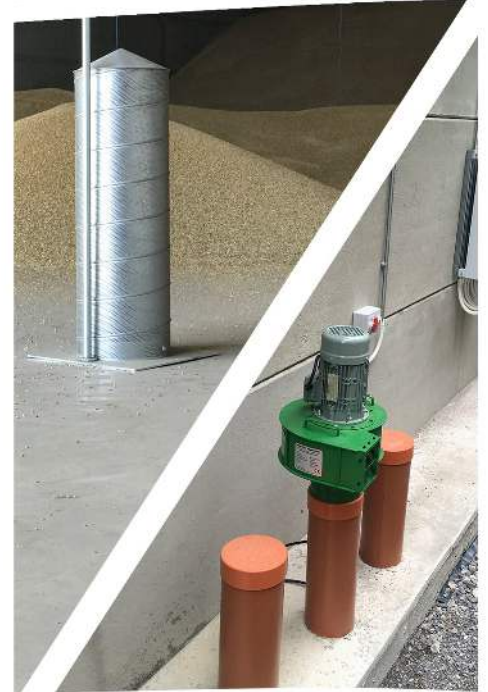


# Martin Lishman

# Crop Storage



**Professional Crop Storage Systems**

## Pile-Dry Pedestals®



*Pile-Dry Pedestals - 45 years of proven success*



*Pile-Dry Pedestals work in grain from 2.5m to 12m deep*

### Fast COOLING and Effective DRYING

Pile-Dry Pedestals cool crops quickly to prevent insects, conserve quality, reduce waste and meet crop assurance requirements.

Pile-Dry Pedestals and Fans is the fastest low volume crop cooling system and is the only system of its kind that will dry grain.

Pile-Dry Pedestals is the most energy-efficient, low-cost and practical solution to crop cooling and is the number one choice for storage professionals.

Pile-Dry Pedestals are metal free-standing vertical aeration ducts with a centrifugal fan fitted into the top that can be moved easily between them.

### Key Benefits

- **Versatile** - to cool, dry and condition all types of bulk stored crops, long or short term in flat stores, bins and silos
- **Easy Handling** - vertical and visible in the store; easy to unload grain around them
- **Sucking System** - avoiding condensation at the surface and the need for level filling
- **Modular**, simple to install; leave buildings multi-purpose.

See Pile-Dry Pedestals in action - visit:

[www.martinlishman.com/pile-dry-pedestals](http://www.martinlishman.com/pile-dry-pedestals)

## Pile-Dry Fans

**F2 Fan**  
1ph or 3ph



**F3 Fan**  
1ph or 3ph



### ENERGY-EFFICIENT cooling with high-powered GREEN fans

Pile-Dry Fans are high performance ventilation fans, delivering high airflows at high pressures.

Target temperatures and moistures are reached more quickly, maximising energy used and reducing storage costs.

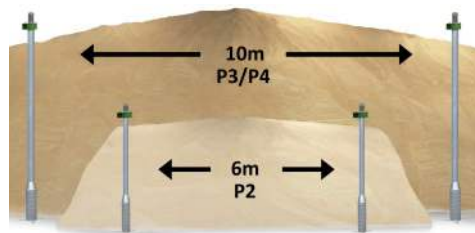
### Key Features

- **Energy efficient** IE3 motor
- **Hard-wearing** aluminium body
- **Easy-access** maintenance

### SELECTING the size and quantity of Pile-Dry PEDESTALS and FANS

#### P2 Pedestal and F2 Fan

- Grain 2.5 - 4.5m deep
- One P2 per 6m x 6m area
- Closer for 18%+ moisture (no more than 3m deep)
- Same spacings for all crops
- At least one F2 fan per 4 P2
- More fans for faster cooling or drying



#### P3/P4 Pedestal and F3 Fan

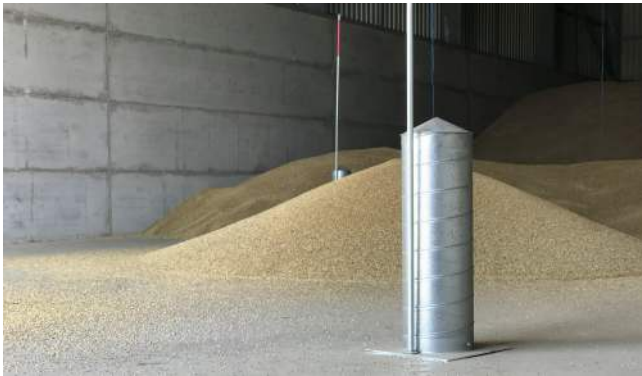
- Grain 4.5 - 12m deep (use P4 heavy duty Pedestal for 7 - 14m)
- One P3/P4 per 10m x 10m area
- Closer for 18%+ moisture (no more than 4.5m deep)
- Same spacings for all crops
- At least one F3 fan per 4 P3/P4
- More fans for faster cooling or drying

# Under-Floor Ventilation

## FloorVent Pedestals



*FloorVent Pedestals - ideal for large, deep grain stores*



*FloorVents use simple, proven Pedestal components*

## An ECONOMIC alternative to UNDER-FLOOR ducts

FloorVent under-floor ventilation is a cost-saving cooling system for new floors, new stores, hopper bottomed bins and silos. It combines the benefits of Pile-Dry Pedestals and Fans with the need to make store handling and filling easier.

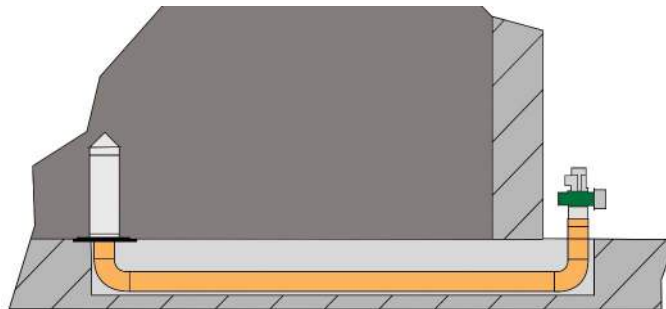
FloorVent units comprise a perforated Pedestal tube with a conical cap to deflect grain during filling. The tube connects to an under-floor duct via a base plate in a recess in the concrete floor. When the store is empty, a man-hole cover placed over the recess leaves the floor totally multi-purpose.

FloorVent suits deep grain stores where logistics and safety considerations make moving fans between Pedestals difficult.

### Key Benefits

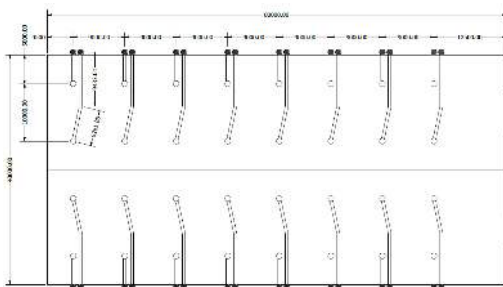
- **Economic** - combines cost-effective cooling with low capital cost per ton, compared to traditional under-floor systems
- **Easier Filling** - less chance that ducts will move during filling. When pushing up or levelling the grain, there is no tube protruding from the grain that could be damaged
- **Direct Heat Extraction** - hot air vents directly outside the building, avoiding the need for extraction fans
- **Low-cost Installation** - using standard building materials in a fraction of the time for traditional under-floor systems

See FloorVent in action - visit:  
[www.martinlishman.com/floorvent](http://www.martinlishman.com/floorvent)



## DESIGNING and INSTALLING a FloorVent System

*- easier and cheaper than traditional under-floor ducts*



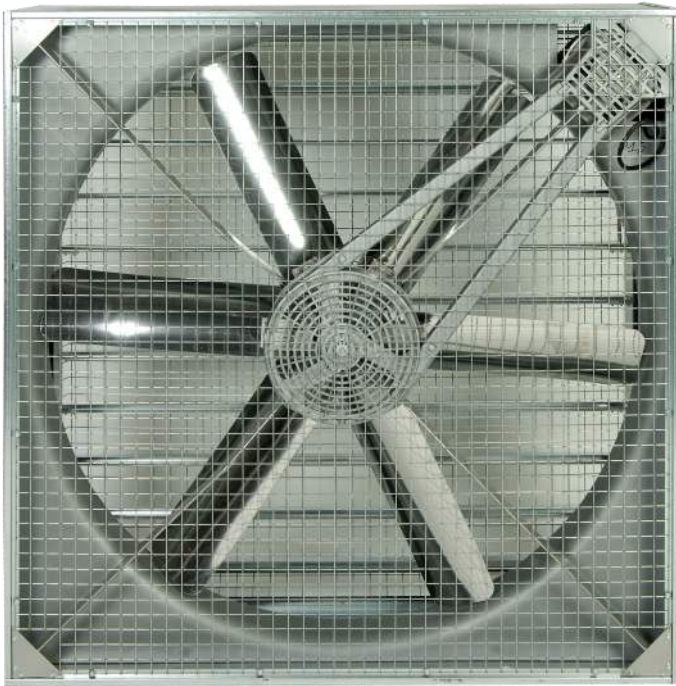
*Typical layout of a FloorVent system in a bulk store*



*Installation uses standard building materials*

- No reinforced concrete channels or ventilation strips in the floor
- Just a simple trench with solid, smooth-walled drainage pipe, back-filled
- Concrete floor is laid and skimmed quickly and easily
- Uses standard building materials, greatly reducing installation costs

## StoreVent



See StoreVent in action - visit:  
[www.martinlishman.com/storevent](http://www.martinlishman.com/storevent)

### Fixed Blade Louvres

StoreVent fixed blade louvres are specially made for Martin Lishman with extra rain resistance to suit agricultural conditions.

#### Key Features

- **Class B category** - providing 95-98.9% protection against rain ingress, with integral internal drip cill and water ejection system
- **Extra strong** - aluminium construction with louvre blades screwed into flanged frame and strengthening mullion to rear
- **Bird mesh** - fitted to inside face
- **Optional** powder coat finish and variable control versions available



### Building AIR EXTRACTION to INCREASE cooling and drying EFFICIENCY

The StoreVent building air extraction system extracts warm, moist air from buildings and replaces it with cool fresh air. This avoids condensation and enables buildings to remain closed for security and quality assurance purposes.

StoreVent maximises the efficiency of crop cooling and drying systems and improves the quality of the stored crop by increasing cooling speed, reducing energy consumption and minimising insect infestation.

StoreVent works equally well with all types of crop ventilation and drying systems, including underfloor ducts.

### High Volume Belt Drive Fans

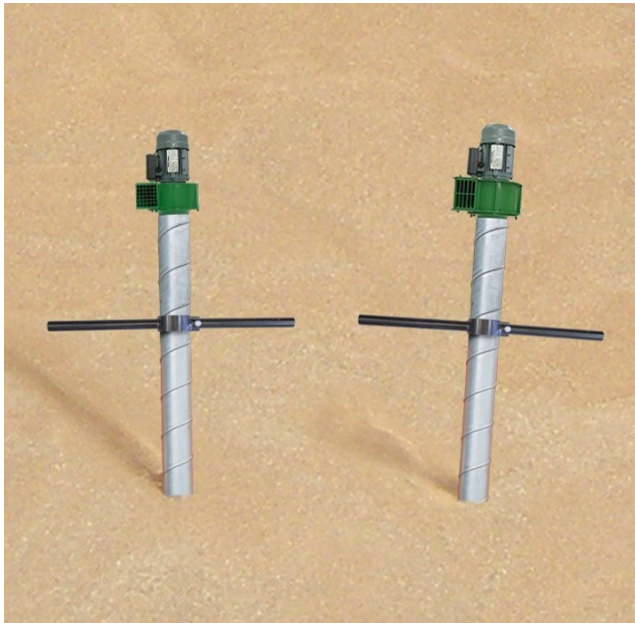
#### Key Features

- **Substantial airflow**, at low pressures and low energy consumption
- **Built-in back draught shutter** - opens and closes automatically when fan switches on or off
- **Bird mesh** - fitted to both sides of the galvanised sheet steel fan housing
- **Automatic control** - can be connected to an automatic fan control system



Ask about StockVent livestock ventilation systems - or log on to [www.martinlishman.com/stockvent-livestock-ventilation-systems](http://www.martinlishman.com/stockvent-livestock-ventilation-systems)

## Trouble-Dry Aeration Spears



### FAST localised COOLING and spot DRYING

Trouble-Dry Aeration Spears and Fans are a simple solution to the common problem of hot spots in stored crops. They are ideal for cooling small quantities of grain, urgent spot drying and controlling unexpected insect infestations.

Crop monitoring gives early warning of possible hot spots and the chance to take action before quality problems develop.

Trouble-Dry aeration spears and fans cure the problem before it gets serious - simply screw the spear into the hot spot and suck the heat out.

#### Key Features

- **Choice of fans** - high airflow for faster cooling of more grain and increased speed of spot drying
- **Choice of spears** - to deal with grain, oil seed rape and poppy seeds
- **Strong handle** - extra-long single piece handle makes it easier to screw the spear in to hot grain

#### More OPTIONS for a wider range of uses

The Trouble-Dry spear is available in 3 versions:

- standard 3mm holes for most grains
- 1.5mm holes for rape and grass seeds
- Fine mesh for cooling poppy seeds



See the Trouble-Dry Spear and Fan in action - visit:

[www.martinlishman.com/trouble-dry-aeration-spears-and-fans](http://www.martinlishman.com/trouble-dry-aeration-spears-and-fans)

### Trouble-Dry STANDARD

- an efficient economic fan



- Cools up to 15 tons of grain in an area 3m square (9m<sup>2</sup>)
- Cures hot spots in 24 hours (depending on conditions)
- Includes *Standard* single phase fan

### Trouble-Dry EXTRA

- stronger fan, faster results



- Cools up to 35 tons of grain in an area 5m square (25m<sup>2</sup>)
- Cures hot spots in 12 hours (depending on conditions)
- Includes *Extra* single phase fan

### Trouble-Dry ULTRA

- spot drying, extra fast cooling



- Fitted with *F2 Pile-Dry* single or 3 phase fan and reducing adapter
- Higher airflow helps achieve extra fast cooling
- Ideal for spot drying in small heaps (depending on conditions)

# Wireless Automatic Crop Store Monitoring

## Barn Owl Wireless Automatic Crop Monitoring

Automatic crop monitoring and energy bills reduced by at least 40% puts Barn Owl Wireless at the top of every store manager's wish list. Barn Owl Wireless reduces crop cooling time and store management energy costs, ensuring crops remain in optimum condition. Installed in flat floor stores, silo or bin complexes, the system is also used in compost production and woodchip storage.

### Barn Owl Wireless Monitoring Features

- **Modular system** with no limit to the quantity of sensors
- **Temperature and humidity** readings sent directly to the user's webpage
- **Web and cloud-based system** – no software installed
- **System backup** - on the Microsoft cloud network

### Automatic Wireless Monitoring Benefits

- **Remotely** check temperature readings and manage stores
- **Continuous monitoring** ensures efficient use of cooling and drying fans
- **Save time and money** - no driving to remote stores
- **Data capture** at any time to suit quality assurance needs

## Flat Floor Stores

Barn Owl Wireless can be used in Pile-Dry Pedestal, FloorVent, under-floor and drying stores. Live colour-coded grain temperature updates identify areas in the store needing further cooling or drying.



## Silo and Bin Storage

Silos and bins of any size can be monitored, using robust silo pendants with sensors at 2m or 3m intervals. Temperatures at each level are displayed, also giving a guide to the depth of grain in the silo.



## Potato Storage and Compost Production

Barn Owl Wireless flexible sensors can be placed to show temperatures at all levels in potato boxes or bulk-stored potatoes. Waterproof stainless steel sensors can be used to monitor all types of compost production facilities.



# Wireless Automatic Control of Cooling and Drying

## Barn Owl Wireless Automatic Fan Control

Barn Owl Wireless automatic controllers ensure that only air good enough to cool or dry the stored crop is used. Fans start automatically if ambient conditions fall below pre-set limits. Control programmes are selected for each fan via the user's webpage, allowing energy-efficient independent operation of cooling and drying fans in relation to each crop sensor reading.

### Barn Owl Wireless Control Features

- **Remote controller configuration** via the user's webpage
- **Choice of controllers** - single fan control, static up to 12 fans, portable up to 5 fans
- **Fan overload** warnings displayed on the user's webpage
- **Continuous** automatic operation if GSM network is down

### Automatic Wireless Fan Control Benefits

- **Reduced crop cooling time** to maintain grain quality
- **Independent control** saves at least 40% of energy costs
- **Control programmes** include temperature differential, thermo-humidistat and drying
- **Automatic control** of ventilation fans, stirrers etc

### Barn Owl Wireless Automatic Fan Controller OPTIONS



#### Single Fan Controller

For automatic control of a single static or portable fan via an individual starter in bulk stores or silos



#### Static Fan Controller

For automatic control of up to 12 static fans via individual starters or a control panel in bulk stores or silos

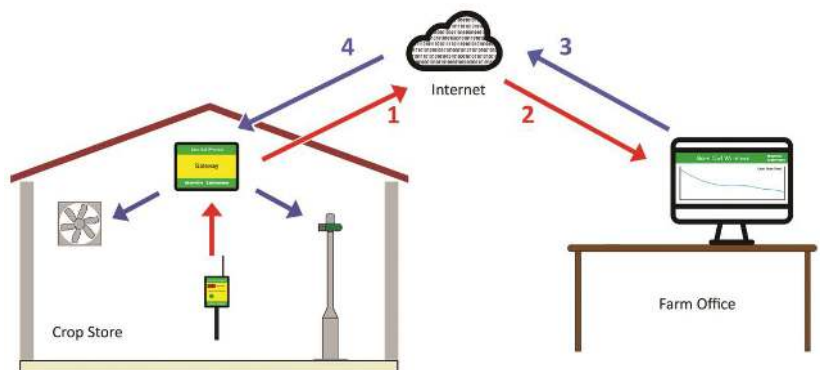


#### Portable Fan Controller

For automatic control of up to 5 single or 3 phase portable fans via built-in starters in bulk stores or silos

### Barn Owl Wireless STEP by STEP

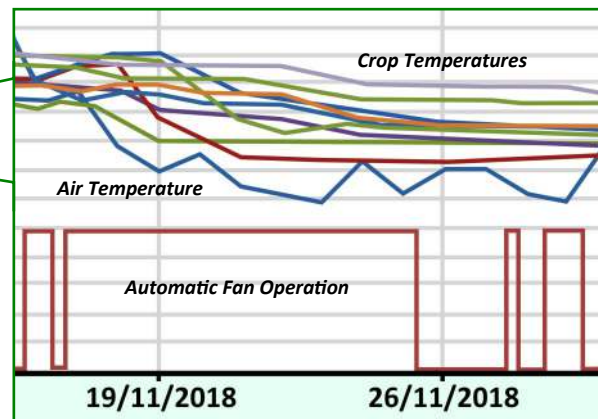
1. **Temperatures** sent to the webpage
2. **Internet access** to the data
3. **Fan controls** selected on the webpage
4. **Automatic control** of fans



Interactive graph displays historical crop and ambient temperatures and fan usage

Date	Crop Sensor Temperature (Deg C)						
	Max	Min	Ave	1	2	3	4
20/08/2012	32.10	27.56	28.07	27.40	30.20	28.40	27.00
21/08/2012	31.80	28.93	28.06	27.10	27.00	28.90	27.40
22/08/2012	30.00	24.52	25.80	22.00	25.00	25.00	24.40
23/08/2012	26.80	22.07	23.62	21.30	23.40	22.70	22.30
24/08/2012	24.50	21.40	22.14	20.20	22.00	21.50	21.30
25/08/2012	22.40	20.61	21.00	19.00	20.90	20.10	20.60
26/08/2012	21.40	19.04	20.20	18.70	20.30	19.40	19.30
27/08/2012	21.20	18.66	19.88	19.20	19.40	19.80	19.90
28/08/2012	21.00	18.60	19.70	19.20	19.30	19.80	19.10

Temperature data can be displayed as a table to show all sensor readings, all fan operation times and fan running costs



A sudden drop in air temperature triggers automatic fan operation and a sharp drop in crop temperature

# Automatic Crop Cooling

## Temperature Differential Automatic Fan Control

Soaring energy prices have made crop drying and cooling expensive, but a Temperature Differential Automatic Fan Controller can reduce cooling energy costs by up to 40%. This is also the fastest way to cool grain with low volume ventilation, helping to maintain crop quality with fewer condensation and fungal problems and less risk of insect infestation.

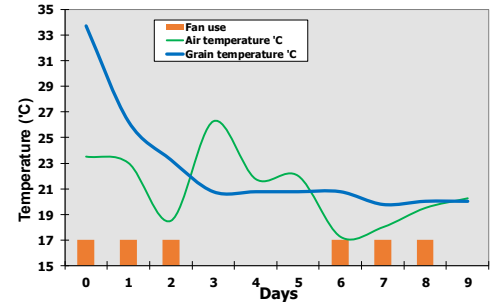
### Static Temperature Differential Controller

Automatically controls any type and quantity of fans to cool crops during ventilation. Sensors measure the air and crop temperature. If the crop temperature is 5°C more than the air temperature, the fans are switched on (see graph below).



#### Key Benefits

- **Fast** energy-efficient crop cooling - saves up to 40%
- **Displays** crop and ambient temperature
- **Controls** any quantity of any type of single or 3 phase fans using automatic starters
- **Includes** crop and air temperature sensors and frost stat override



### Portable Temperature Differential Controller

The Portable Temperature Differential Controller allows ventilating fans to be shared between crop stores on the same or different sites, with just one controller. It can be moved between stores if the fans are re-located.



#### Key Benefits

- **All** the benefits of the static controller (above)
- **Fully** portable within and between stores
- **Avoids** extensive installation work - just requires a suitable power supply
- **Includes** all fan power plugs and sockets
- **Extraction** fans can also be controlled



### Temperature Differential Control with Crop Temperature Monitoring

Crop monitoring can be added to both types of the Temperature Differential Controller using up to twelve 2m or 3m long crop temperature sensors and suitable length extension cables. Sensors are selected using a Multi-Sensor Switch connected to the controller. This assists store management decisions by showing where to locate ventilation fans. The highest reading sensor should be selected to switch the fans on automatically.





## Thermo-Humidistat Automatic Fan Control

Drying grain using ambient air can be quicker and more likely to succeed using Thermo-Humidistat control. Measuring grain moisture and using pre-set humidity limits on the controller ensures that ventilation fans don't draw damp air into the grain and are only used to dry the grain.

### Static or Portable Thermo-Humidistat Controller

Automatically controls fans so that only air good enough to cool or dry the crop is used for ventilation. Sensors monitor ambient relative humidity and temperature and automatically start the fans if conditions fall below pre-set limits. The Portable Thermo-Humidistat Controller allows drying fans to be shared between crop stores on the same or different sites, with just one controller. It can be moved between stores if the fans are re-located.



#### Key Benefits (both)

- **Simple** automatic control of drying and cooling
- **Displays** ambient air temperature and RH
- **Controls** any quantity of any type of single or 3 phase fans using automatic starters
- **Includes** air temperature and humidity sensors

#### Portable

- **Fully** portable within and between stores
- **Avoids** extensive installation work - just requires a suitable power supply
- **Includes** all fan power plugs and sockets
- **Extraction** fans can also be controlled



## Barn Owl Stand-Alone Temperature and Humidity Fan Control

This controller combines the benefits of our wired automatic fan controllers in one unit, and includes 3 drying programmes which allow only air of the correct humidity to ventilate the grain. The controller also includes crop temperature measurement, so it can be changed to the temperature differential control programme after drying has been completed.

### Static or Portable Barn Owl Stand-Alone Controller

The Barn Owl Controller uses ambient humidity & temperature and crop temperature sensors to control crop drying & cooling with any type and quantity of crop store fan. Programmes include temperature differential, humidistat control & 3 drying options. The Portable Barn Owl Stand-Alone Controller allows cooling or drying fans to be shared between crop stores on the same or different sites, with just one controller. It can be moved between stores if the fans are re-located.

#### Key Benefits (both)

- **Comprehensive** automatic control of drying and cooling
- **Eight** control programmes, including drying and temperature differential control
- **Displays** crop temperature, ambient air temperature & RH
- **Controls** any quantity of any type of single or 3 phase fans using automatic starters
- **Includes** crop temperature, air temperature & RH sensors

#### Portable

- **Fully** portable within and between stores
- **Avoids** extensive installation work - just requires a suitable power supply
- **Includes** all fan power plugs and sockets
- **Extraction** fans can also be controlled



# Simple Temperature Monitoring

## MiniTemp Temperature Monitor

### FAST RESPONSE

The MiniTemp Temperature Monitor is essential for conforming to quality assurance schemes. Regular store checks help to ensure fast, energy efficient crop cooling.



Fast response 1.5m stainless steel sensor - several readings can be taken quickly



Locking connector prevents accidental disconnection during use



### Range of compatible temperature sensors:

- 1.5m or 2m stainless steel portable
- 2m or 3m PVC static for grain or bulk potatoes
- Flexible cable sensor, any length for grain bins or potato boxes

## Simple MULTI-SENSOR Monitoring

Connect up to 12 crop temperature sensors to a Multi-Sensor Switch using sensor extension cables and plug in a MiniTemp Monitor to create a simple logging system. Takes multiple records quickly and ensures readings are always taken in the same place. Helps to decide where to locate cooling fans.



**Multi-sensor switch** - connects up to 12 crop sensors. Plug in a MiniTemp Monitor and turn the selector to take each sensor reading.

## MiniTemp Blue

Bluetooth crop temperature monitor and logger

### FAST crop temperature monitoring with data logging

- Instant crop temperature readings with a smartphone App
- Logs temperature data for up to 6 months
- Download stored data for long-term record keeping



ML Sensing iOS/Android App

## Silo Temperature Monitoring



### Hand-held Meter or Wireless Monitoring

Steel-core silo strings up to 60m and push-in composite probes up to 12m for silos and bins can be connected to a hand-held reader or our Barn Owl Wireless system - please ask for further details.

## Compost Temperature Monitoring



### Minitemp Monitor or Wireless Monitoring

2m stainless steel push-in sensors for compost production monitoring can connect to either a MiniTemp Monitor or as part of our Barn Owl Wireless System - please ask for further details.

# Crop Storage Details and Specifications



## Pile-Dry Pedestals

**Scope of use:** Pile-Dry Pedestals and FloorVent Pedestals (see below) are suitable for cooling and drying most bulk-stored crops. They are not recommended for drying oil seed rape or linseed and should not be used at all in association with corrosive materials such as Propionic Acid (Prop Corn) and high erucic acid oilseed rape. Installation and use is similar for all crops, but some may require slight changes (please ask for advice if unusual crops or commodities are being stored).

### P2 Pedestal (Product Code: P2)

For crops 2.5 - 5m deep. Includes end cap and base stand. Normal spacing 6m. For 18%+ grain moistures, position closer and store no deeper than 3m.

**P2 Extensions:** 0.9m (Product Code: P23T); 1.8m (Product Code: P26T); Connector (Product Code: P2C) - each extension requires a connector.

### P3 Pedestal (Product Code: P3)

For crops 4.5 - 12m deep. Includes end cap and base stand. Normal spacing 10m. For 18% + grain moistures, position closer and store no deeper than 4.5m.

**P3 Extensions:** 0.9m (Product Code: P33T); 1.8m (Product Code: P36T); Connector (Product Code: P3C) - each extension requires a connector.

### P4 Pedestal (Product Code: P4)

50% stronger, with 35% extra airflow. For crops 6.5 - 14m deep. Includes end cap and base stand. Normal spacing 10m. Not recommended for 18%+ grain moistures.

**P4 Extensions:** 0.9m (Product Code: P43T); 1.8m (Product Code: P46T); Connector (Product Code: P4C) - each extension requires a connector.

**Rape Sleeves:** for use with Pedestals when cooling rape, linseed and other small seeds. For P2 - Product Code: P2HESSIAN; for P3 - Product Code: P3HESSIAN; for P4 - Product Code: P4HESSIAN.

## Specifications:

### Pile-Dry Pedestal standard components:

**P2 (3m height):** 10" (250mm) base plate; 10" x 3' (250mm x 0.9m) perforated duct; 10" to 6" dia. (250mm to 150mm) reducer; 6" x 6' (150mm x 1.8m) plain duct; 6" dia. (150mm) end cap. **Total weight (3m):** 14kg

**P3 (4.8m height):** 12" (300mm) base plate; 12" x 3' (300mm x 0.9m) perforated duct; 12" to 8" dia. (300mm to 200mm) reducer; 2 of 8" x 6' (200mm x 1.8m) plain duct; 8" dia. (200mm) x 400mm connector; 8" dia. (200mm) end cap. **Total weight (4.8m):** 25kg

**P4 (7m height):** 12" (300mm) base plate with securing eye; 12" x 4.25' (300mm x 1.3m) round hole perforated duct; 12" to 8" dia. (300mm to 200mm) reducer; 3 of 8" x 6' (200mm x 1.8m) plain spiral duct; 2 of 8" dia. (200mm) x 400mm connector; 8" dia. (200mm) end cap. **Total weight (7m):** 73kg

**NB:** Pile-Dry Pedestal components have Imperial measurements and are not compatible with metric sized ducts. Metric sizes shown are approximate equivalents to the actual Imperial sizes.

**Assembly:** Pedestal components are assembled and joined using a friction fit system. It is recommended to secure P4 Pedestals in a vertical position by attaching a ratchet strap or similar between the base plate and a fixing point in the building roof.

**Special versions:** Please ask for details of components to suit bins and silos. We can design a system to suit your requirements.



## FloorVent Pedestals

**Scope of use:** See above

### P3 FloorVent (Product Code: P3/FV)

For crops 4.5 - 18m deep. Includes perforated duct, mounting plate, conical end cap and marker pole assembly. Normal spacing 10m apart. Store no deeper than 4.5m for 18%+ grain moistures.

**Applications:** can be fitted in new concrete floors, retrofitted to old concrete floors and in hopper-bottomed bins and silos. Uses standard building materials below ground level, at a fraction of the cost of traditional under-floor systems. Please ask for further details and examples.

## Specifications:

### FloorVent Pedestal standard components:

**P3/FV:** 12" x 3' (300mm x 0.9m) round hole perforated duct; 12" dia. (300mm) conical end cap, floor mounting plate with 12" dia (300mm) duct mounting ring, two-piece marker pole assembly with plate securing pin. **Total weight:** 18kg

**NB:** FloorVent Pedestal component measurements are Imperial and are not compatible with metric sized ducts. Metric sizes shown are approximate equivalents to the actual Imperial sizes.

**Assembly and installation:** Components are simple to assemble and position on the floor. Under-floor and external components should be installed by a competent civil engineering contractor.



## Pile-Dry Fans

### F2 - Single phase (Product Code: F2/1/B); - 3 phase (Product Code: F2/3/B)

For P2 Pedestals. Fitted with 6"/150mm tapered inlet spigot and 3m connection cable. Must be installed and used with a thermal overload.

**Options:** Blowing adapter plate (Product Code: F2/BLOWPLATE)  
Fan adapter to fit Hot Spot Spear (Product Code: PED64ADAPTER)  
Manual fan overload and undervoltage protector (Product Codes: F2/1/BSTARTER; F2/3/BSTARTER)

### F3 - Single phase (Product Code: F3/1/B); - 3 phase (Product Code: F3/3/B)

For P3 Pedestals. Fitted with 8"/200mm tapered inlet spigot and 3m connection cable. Must be installed and used with a thermal overload.

**Options:** Blowing adapter plate for F3/3/B (Product Code: F3/BLOWPLATE)  
Fan adapter to fit P2 Pedestal (Product Code: PED86ADAPTER)  
Fan adapter to fit Hot Spot Spear (Product Code: PED84ADAPTER)  
Overload (as above) (Product Codes: F3/1/BSTARTER; F3/3/BSTARTER)

## Specifications:

### Motor:

**F2/1/B** 240v, 50Hz, 1.1kW, 1.5HP, 6.65A, IP55

**F2/3/B** 415v, 50Hz, 1.1kW, 1.5HP, IE3, 2.23A, IP55

**F3/1/B** 240v, 50Hz, 1.5kW, 2HP, 8.75A, IP55

**F3/3/B** 415v, 50Hz, 2.2kW, 3HP, IE3, 4.35A, IP55

### Performance (maximum):

**F2/1/B & F2/3/B** airflow 1400cfm (2380m<sup>3</sup>/h); pressure 6¼"wg (1550PA)

**F3/1/B** airflow 1875cfm (3190m<sup>3</sup>/h); pressure 6¾"wg (1670PA)

**F3/3/B** airflow 2225cfm (3780m<sup>3</sup>/h); pressure 7½"wg (1870PA)

### Weight:

F2/1/B 17Kg; F2/3/B 18Kg; F3/1/B 27Kg; F3/3/B 29Kg

### Sound levels (dB @ 3m/5m):

**F2/1/B** 76/75; **F2/3/B** 80/77; **F3/1/B** 79/75; **F3/3/B** 80/75



## StoreVent

### Belt-Drive Fans

Galvanised steel fan housing with bird proof mesh on both sides, self-cleaning stainless steel impeller and built-in centrifugally operated back-draught shutter that closes automatically when the fan switches off.

**Product Codes (measurement is fan diameter):**

**800mm - Single phase (SV800/1BELT); - 3 phase (SV800/3BELT)**

**1000mm - Single phase (SV1000/1BELT); - 3 phase (SV1000/3BELT)**

**1250mm - Single phase (SV1250/1BELT); - 3 phase (SV1250/3BELT)**

Fans require an individual manual or automatic starter with overload protection.



### Air Intake Louvres

Aluminium, Class B (95-98% rain protection), 30mm flanged frame, 38mm pitch fixed blade air intake louver with rear mullion, drip cill, rear drip tray and bird proof mesh.

**Product Codes (measurement refers to size of the hole in the wall required):**

**1000 x 1000mm (SV1000); 1100 x 1100mm (SV1100); 1200 x 1200mm (SV1200); 1250 x 1250mm (SV1250); 1500 x 1500mm (SV1500)**

Louvres can be supplied powder-coated to order to match most cladding colours. Moving blade and motorized louvres available on request.

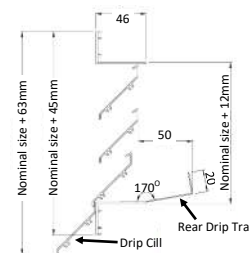
**NB:** Fans and louvres should be installed by competent installation technicians.

## Specifications:

Fan Code	m <sup>3</sup> /S	Pa	V	kW	A	H/W (mm)	D (mm)	Wt (Kg)	dB
SV800/1BELT	4.6	60	240	0.75	4.5	960	470	44	58
SV800/3BELT			400						
SV1000/1BELT	7.1	100	230	0.75	5.4	1150	470	50	59
SV1000/3BELT			400						
SV1250/1BELT	12.1	80	230	1.1	7.2	1380	470	70	60
SV1250/3BELT			400						

m<sup>3</sup>/S = max airflow; Pa = max pressure; V = volts; kW = power; A = Amps; H/W = height/width (mm); D = depth (mm); Wt = weight (Kg); dB = sound

### Louvre dimensions (all sizes shown in mm)



# Crop Storage Details and Specifications

## Trouble-Dry Spears & Fans

**Trouble-Dry Standard** (Product Codes - for grain: TDS; for rape: TDSR)  
Grain aeration spear, strong handle, single phase fan with 2m cable

**Trouble-Dry Extra** (Product Codes - for grain: TDEB; for rape: TDERB)  
As above with aluminium body single phase fan, 4m cable, UK plug

**Trouble-Dry Ultra** (Product Codes - for grain: single phase - TDU/1; 3 phase - TDU/3; for rape: single phase - TDUR/1; 3 phase - TDUR/3)  
Spear, handle, fan adapter and 1.1kW 1ph or 3ph fan

**Component Product Codes:** Grain spear only (TDG); Handle (TDH); Rape spear (TDR); Fan adapter to fit Hot Spot Spear (PED64ADAPTER); Standard fan (FTDS); Extra fan (FTDEB); Ultra fan (F2/1/B or F2/3/B) - all available separately  
Option: Euro plug for FTDEB (please specify when ordering)



### Specifications:

**Grain spear** 7'6" (2.3m) x 4" dia. duct perforated in bottom half, with flighted spear point; **Rape spear** As grain with smaller perforations; **Handle** Single piece with attachment collar & bolt  
**Fans** (see previous page for F2/1/B & F2/3/B specifications)  
**Motor:** FTDS & FTDEB 240v, 50Hz, 0.12kW, 0.83A, IP55  
**Performance (maximum):**  
FTDS airflow 275cfm (470m<sup>3</sup>/h); pressure 1 3/4"wg (436PA)  
FTDEB airflow 400cfm (680m<sup>3</sup>/h); pressure 2"wg (500PA)  
**Weight:** FTDS & FTDEB 7Kg  
**Sound levels (dB @ 3m/5m):** FTDS 70/67; FTDEB 66/64  
**Total weight:** TDS/TDEB 13.5Kg; TDU 25Kg

## Barn Owl Wireless Automatic Monitoring and Control

Systems are specified individually for each storage situation.

The following components might be included:

**Gateway gsm-internet link** (Product Code: BOW/GATE)  
Handles all sensors & controllers in one geographical location

**Wireless Bridge** (Product Code: BOW/BRIDGE)  
Enhances radio signal transmission between buildings

**Silo Sensor Transmitter** (Product Code: BOW/MSU)  
Sends data from up to 160 silo sensing points

**Wireless Crop Temperature Sensors**  
Rigid pvc sensor with battery powered transmitter (Product Code: 2m - BOW/ST/2; 3m - BOW/ST/3); Stainless steel sensor with waterproof transmitter suited to compost production (Product Code: 2m - BOW/ST/2/COMPOST); Multi-input transmitter, suited to potato stores (Product Code: BOW/TR/4 - add flexible cable sensors to suit).

**Wireless Silo Temperature Sensors** (please enquire for further details)  
PVC sheathed steel cable sensor; with suspension loop and 20m connection cable

**Wireless Ambient Humidity & Temperature Sensor** (Product Code: BOW/ST/ATH/A)  
Waterproof transmitter, 240v power supply, detachable sensor

**Wireless Static or Portable Automatic Fan Controller**  
Many options possible for up to 12 fans (please ask for further details)



### Specifications:

**Gateway** - with SIM card and aerial. Dimensions: 19.5 x 19.5 x 9.5 cm plus 1m aerial extension cable. Power supply: 240v  
**Bridge** - with 2 aerials, 2m connecting cable, mounting bracket  
Dimensions: 7.5 x 15 x 5 cm; Power supply: 240v  
**Crop Sensor** - transmitter with aerial, 1 or 4 sensor input sockets  
Dimensions: 9.5 x 30.5 x 5.5 cm; Power supply: Replaceable battery pack (typical life 2-3 years).  
**Silo Sensor** - 2 or 3m sensor spacing; lengths from 5 to 60m.  
**Ambient Humidity & Temperature Sensor** - transmitter with aerial connected by 3m cable to sensor in enclosure. Dimensions: Transmitter - 15 x 7.5 x 11.5 cm, Sensor enclosure - 15 x 8 x 5.5cm; Power supply: 240v  
**Static Automatic Controller** - for wiring directly to a control panel or automatic starter. Single fan - Dimensions 15 x 7.5 x 11.5 cm; Up to 12 fans - Dimensions 41 x 34 x 14 cm; Power supply: 240v to controller  
**Portable Automatic Controller** - board-mounted unit for up to four single or five 3 phase fans (depending on rating), with 32A power input socket & plug, fan connection plugs and sockets, built-in starter/overloads. Dimensions: 61 x 45 x 19cm. Weight: c.10Kg. Power supply: 240v or 415v as specified

## Automatic Cooling and Drying

**Temperature Differential Controller** - includes ambient & crop temperature display, frost setting, auto/manual & on/off functions; 2m rigid crop temperature sensor with 20m extension cable, air temperature sensor with 10m extension cable.  
Product Codes: Static version: FC049/A, Portable version: FCBM...specify fan quantity & type.  
Options: 3m crop sensor (Product code: FC055), longer extension cables (FC046/length), automatic fan starters with and without time delay (code depends on fan type)

**Thermo-Humidistat Controller** - includes ambient display, air temperature and RH sensors.  
Product Codes: Static version: FC003, Portable version: FCBM/TH...specify fan quantity & type.  
Options: automatic fan starters with and without time delay (code depends on fan type)

**Barn-Owl Stand-Alone Temperature & Humidity Controller** - includes ambient RH and temperature & crop temperature display, 8 control programmes including drying and temperature differential; 2m rigid crop temperature sensor with 20m extension cable, air temperature sensor with 10m extension cable.  
Product Codes: Static version: BARNOWLCONSA, Portable version: FCBM/BO...specify fan quantity & type. Options: 3m crop sensor (Product code: FC055), longer extension cables (FC046/length), automatic fan starters with and without time delay (code depends on fan type), dual channel version with additional 2m crop temperature sensor and 20m extension cable



### Specifications:

**Static Automatic Controller** - to control any quantity of single or 3 phase fans for wiring directly to a control panel or suitable automatic starters. Dimensions (control unit only): Temperature Differential 13 x 13 x 10cm; Thermo-Humidistat 15 x 22 x 11cm; Barn Owl Stand-Alone 41 x 29 x 13cm. Power supply: 240v to controller  
**Portable Automatic Controller** - board-mounted unit for up to four single or five 3 phase fans (depending on rating), with 32A power input socket & plug, fan connection plugs and sockets, built-in starter/overloads. Dimensions: 61 x 45 x 19cm. Weight: c.10Kg. Power supply: 240v or 415v as specified  
**Controller Performance** - Temperature Differential: Accuracy: +/-1°C at 25°C, range: -50-99°C; Thermo-Humidistat: Accuracy: +/-0.2°C at 25°C, range: -10-70°C; +/-5%RH over 0-100% RH; Barn-Owl Stand-Alone: Accuracy: +/-3%RH over 0-90% RH, +/-5% above 90%; +/-0.5°C over 0 - 70°C, full range -55-125°C.

## Temperature Monitoring Packages

**MiniTemp** with portable stainless steel sensor:  
600mm (Product Code: CQ/MTM/PS600)  
1.5m (Product Code: CQ/MTM/PS15)  
2m (Product Code: CQ/MTM/PS2)  
**Multi-Sensor Switch**, rigid pvc sensors, sensor extension cables:  
6 x 2m sensors, 3 x 20m, 3 x 30m extensions  
(Product Code: CQ/MULTIPACK/6)  
12 x 2m sensors, 4 x 20m, 4 x 30m, 4 x 40m extensions  
(Product Code: CQ/MULTIPACK/12)



### MiniTemp Blue

Bluetooth crop temperature monitor and data logger with iOS/Android App and rigid pvc crop temperature sensor

2m sensor (Product Code: CQ/MTM10BLUE)  
3m sensor (Product Code: CQ/MTM10BLUE/3M)

### MiniTemp Blue for Compost

(Product Code: CQ/MTM10BLUE/CP)  
As above, in waterproof enclosure with 2m stainless steel compost temperature sensor.



### Specifications:

**Monitor:** Max, Min, Auto-off, Calibration certificate  
Accuracy: +/- 0.4°C over range -10°C to 70°C, with sensor: -40°C - 125°C; Power: 3 x AAA battery (included)  
**Multi-Sensor Switch:** 12 sensor sockets, output connecting cable; Dimensions: 165 x 120 x 85 mm; Weight: 450g  
**MiniTemp Blue Accuracy:** +/- 0.5°C over range -25°C to 75°C.; Resolution: 0.1°C; Power: Lithium 1/2 AA battery, c. 6 month battery life (included); Measuring interval: 1s to 24hr; Start delay: 1s to 6 month; Memory: Max. 32,000 values; Data Transfer: Bluetooth 4.0; Data export format: CSV

Pile-Dry and FloorVent Pedestals and Fans, Trouble-Dry Spears and Fans, StoreVent louvres, Barn Owl Wireless systems, automatic fan controllers and temperature monitoring products are designed, manufactured or produced exclusively by or for Martin Lishman Ltd. © All designs copyright Martin Lishman Ltd. StoreVent fans are manufactured by Hydor Ltd. \*Pile-Dry Pedestals and Barn Owl are registered trademarks of Martin Lishman Ltd. \*\*FloorVent, Trouble-Dry, StoreVent, MiniTemp and MiniTemp Blue are trade marks of Martin Lishman Ltd. Martin Lishman Ltd reserves the right to alter product specifications at any time without notice.  
© Martin Lishman Ltd March 2023

## Martin Lishman Ltd

Unit 2B, Roman Bank, Bourne, Lincs, PE10 9LQ, UK

T: +44 (0)1778 426600

E-mail: sales@martinlishman.com

www.martinlishman.com

@Martin\_Lishman

f/martinlishmanltd