Fancom One

Poultry



USER MANUAL FOR PRODUCT APPLICATION

EN260826

fancom®
forward thinking

Introduction

Fancom One is Fancom's intelligent control system that elevates agricultural management to the next level. This advanced system is not just a traditional solution – it is a complete Smart Farm Ecosystem.

A 'barn ecosystem' is a smart and integrated system that leverages state-of-the-art technologies to fully automate the optimization of animal housing conditions.
Fancom One automates climate control, feed and water distribution, lighting, and animal monitoring using advanced control techniques and sensors. The system continuously learns from its environment and automatically adapts to optimize living conditions for your animals while simultaneously enhancing the productivity of your barns.

This poultry version is designed to control all Fancom climate systems in a poultry barn. Additional software modules for animal weighing, batch weighing, and silo weighing will follow shortly.

Products

Article number	Description	
7010350	Fancom One User Interface 15" The standalone control display is powered and connected to the WHC.	
7010360	Fancom One Whole House Control (WHC). The WHC is the heart of Fancom One and consists of a Raspberry Pi with 2GB RAM, 8GB eMMC, a USB port, and a 250GB SSD drive. The unit includes basic I/O: 9 temperature inputs, 6 analog inputs, 10 digital inputs, 5 analog outputs, and an alarm output. The WHC also features built-in I/O-Net support to accommodate all existing I/O-Net modules, such as IDM.16, ISB.16, IAM.12, IRM.16, IVM, ILM.C, IM.60, IM.125, IMS and all IFans.	
7160010	Fancom One Power Supply 80 Watt Power Supply.	

7160015	Fancom One Power Supply +5P switch 80-Watt Power Supply, includes a 5-port switch for connecting all Ethernet modules.	
37018014	Relay Module IRM.16 Extension module for 16 relays	
37018014.01	Relay Module IRM.16 US/CAN Extension module for 16 relays, For USA and Canada	
7160015	Fancom One Router	

Characteristics

- **Precise process control**

  Fancom's proven control algorithms, integrated into the new Fancom One, together with modern technologies, form the most advanced farm system, ready for innovations such as smart sensors, IoT and AI for more efficient and animal-friendly farm management.

- **Role-based access control**

  This feature allows you to precisely define who has access to which parts of the barn computer, making management more efficient and secure, keeping sensitive data protected and solving problems faster. Currently, 4 standard roles are available

- **Intelligent alarms**

  The Fancom One Smart Farm Ecosystem ensures that alarm notifications always reach the right person, prevents damage through quick interventions and records alarms to continuously improve processes.

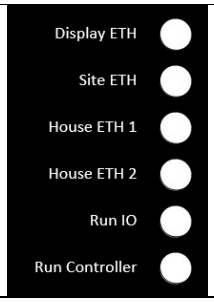
- **Personal user interface**

  Users can create their own dashboards with widgets for crucial data such as climate, feed intake and animal health, enabling quick responses, time savings and fewer errors.

- **Modular structure**

  Farmers can tailor their system to their specific needs with modules for climate, feed automation and weighing, and easily expand as the farm grows, making the investment future-proof.

Hardware

Hardware on board	Description	Num
Digital inputs	Measuring status, pulse width or frequency	10
Analogue inputs	Interfacing with external sensors, no jumpers	6
Temperature inputs	Interfacing with temperature sensors, no jumpers	9
Analogue outputs	0.0 - 10.6V	5
Relays	Via IRM.16, IRM.20, ISB.16 or other I/O-Net modules	None
Alarm relay	NC, NO contacts	√
I/O-Net	Parallel in/out for daisy chaining	1
Ethernet	2x 10/100 Mbit ports, in/out for daisy chaining, external (HMI, Site Controller), internal (Modules (successor IO-net))	4
USB	For software update For creating/restoring backups	√ √
Power in	24VDC, external 80W power supply can also power up HMI15	1
Power out	12VDC (100mA) for external digital sensors 24VDC for external analogue sensors or modules	2
LED's		6

Supported I/O-Net modules	Ver 1.5	Ver 1.6	Ver 1.7
IM.60	√	√	√
IM.125	√	√	√
IMS 230/400	√	√	√
IFans	√	√	√
IRM.16	√	√	√
ISB.16	√	√	√
IAM.12	√	√	√
IDM.16	√	√	√
IVM Touch	√	√	√
ISM.12	√	√	√

Software

Current version (2026-08-26): **Ver 1.7**

Maximum assignable sensors	Ver 1.5	Ver 1.6	Ver 1.7
Temperature sensors	16	16	16
Humidity sensor	4	4	4
Static pressure sensor	4	4	4
Carbon dioxide sensor (CO2)	4	4	4
Ammonia (NH3)	4	4	4
Maximum assignable sensors for outside conditions	**Ver 1.5**	**Ver 1.6**	**Ver 1.7**
Outside temperature	1	1	1
Outside RH	1	1	1
Windspeed & direction	-	-	-
Settable controls in software	**Ver 1.5**	**Ver 1.6**	**Ver 1.7**
Inlet (zones)	8	8	8
Nr of temperature sensors available	4	4	4
Heating (zones)	16	16	16
Nr of temperature sensors available	16	16	16
Cooling (zones; nozzle/pad cooling)	16	16	16
Nr of temperature sensors available	16	16	16
Tunnel (zones; always using house temperature)	4	4	4
Humidification control	1	1	1
Dehumidification control	1	1	1
Relays for on/off controlled fans	20	20	20
Speed controllable fans	20	20	20
Speed controllable fan groups	20	20	20
Nr of fans per group	8	8	8
Max settable power stages (Combi table)	32	32	32
Max settable tunnel stages (Combi table)	32	32	32
OptiSec	√	√	√
Effective temperature	√	√	√
Multi house control	√	√	√
Common use of outside temperature	√	√	√
Central heat demand	-	-	-
Vortex control	-	-	-
Micro control	-	-	-
Desert control	-	√	√
Half house brooding	-	-	-
Supported ventilation concepts	**Ver 1.5**	**Ver 1.6**	**Ver 1.7**
MTT Ventilation	√	√	√
Combi ventilation	√	√	√
Cross ventilation	√	√	√
Stair-step ventilation	√	√	√
Ridge ventilation	√	√	√
Tunnel ventilation	√	√	√
Natural ventilation	-	-	-
Zero pressure ventilation	√	√	√

Clocks & Registration	Ver 1.5	Ver 1.6	Ver 1.7
Water clocks	16	16	16
Number of settable switching times per clock	100	100	100
Registration inputs	8	8	8
Feed clocks	16	16	16
Number of settable switching times per clock	100	100	100
Registration inputs	8	8	8
Universal clocks	16	16	16
Number of settable switching times per clock	100	100	100
Light clocks	24	24	24
Number of settable switching times per light clock	100	100	100
Light measurement	√	√	√
Light control	√	√	√
Number of light curves	1	1	1
Number of bend points in light curve	100	100	100
Registration groups	**32**	**32**	32
External alarms	32	32	32
Alarm groups	4	4	4
Fire detection (thermo diff)	√	√	√
Compartments	48	48	48
Management	**Ver 1.5**	**Ver 1.6**	**Ver 1.7**
Animal management	√	√	√
Temperature curves	10	10	10
House temperature	√	√	√
RH	√	√	√
Extra temperature (for heating or cooling control)	√	√	√
Ventilation curves	10	10	10
Ventilation min	√	√	√
Ventilation max	√	√	√
Animal weight (for calculating the ventilation level)	√	√	√
Water/Feed curves	1	10	10
Water	√	√	√
Feed	√	√	√
Data communication	**Ver 1.5**	**Ver 1.6**	**Ver 1.7**
PC software FarmManager (F-Net)	-	-	-
Communication between controllers	Ethernet – House	Ethernet – House	Ethernet – House
Communication HMI - controllers	Ethernet - LAN	Ethernet - LAN	Ethernet - LAN
Fancom modules (I/O Net)	√	√	√
Remote access via Local Network	√	√	√
Remote control via the Internet	Fancom One Router (Wifi/4G)	Fancom One Router (Wifi/4G)	Fancom One Router (Wifi/4G)
Software Modules	**Ver 1.5**	**Ver 1.6**	**Ver 1.7**
Heat exchanger (including stir fan control)	8	8	8
Silo Monitoring	-	10	10
Batch Weighing Broilers	-	-	1
Bird Weighing 1 scale		1	1
Bird Weighing Multiple scales	-	-	-

Influences	Ver 1.5	Ver 1.6	Ver 1.7
Low outside temperature (cold)			
Bandwidth ventilation	√	√	√
Minimum ventilation	√	√	√
Air inlets	√	√	√
Tunnel inlets	√	√	√
Pressure	√	√	√
High outside temperature (warm)			
Bandwidth ventilation	√	√	√
Temperature difference			
Air inlets	√	√	√
Tunnel inlets	√	√	√
Pressure			
Air inlets	√	√	√
Tunnel inlets	√	√	√
RH			
Heating	√	√	√
Stop cooling above % RH	√	√	√
Minimum ventilation	√	√	√
CO2			
Minimum ventilation	√	√	√
NH3			
Minimum ventilation	√	√	√
Wind direction			
Ventilation (M/MT)	-	-	-
Air inlets	-	-	-
Tunnel inlets	-	-	-
Storm			
Ventilation (M/MT)	-	-	-
Air inlets	-	-	-
Tunnel inlets	-	-	-
Vortex damper	-	-	-
Cooling			
Maximum ventilation	√	√	√
Night correction			
Setpoint house	√	√	√
Minimum ventilation	√	√	√
Supported languages	**Ver 1.5**	**Ver 1.6**	**Ver 1.7**
English	√	√	√
Dutch	√	√	√
French	√	√	√
Portuguese	√	√	√
Spanish	√	√	√
Chinese	√	√	√
German	√	√	√
Turkish	-	-	√
Polish	-	-	√
Bulgarian	-	-	√
Romania	-	-	√
Italian	-	-	-
Hungarian	-	-	-

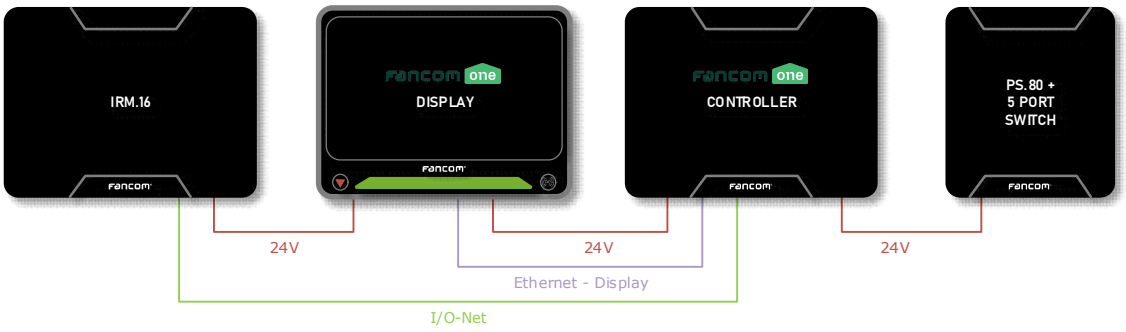
** Missing languages can be added upon request*

Network setup examples

In the following chapters, you will find examples of how to set up your Fancom One network. It is also possible to combine these examples to suit your specific needs.

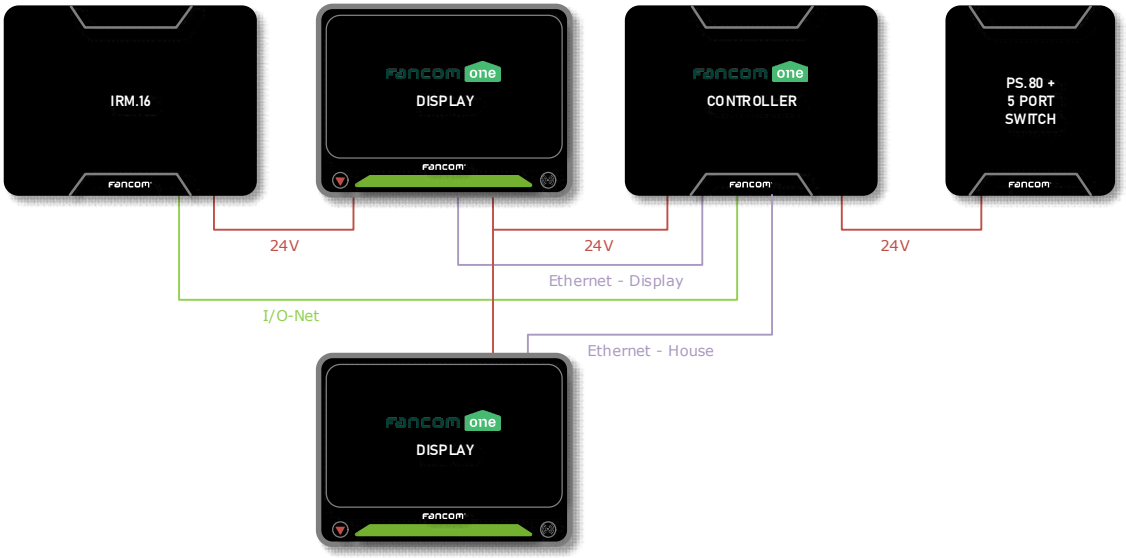
1 House – 1 Display

Display is directly connected to the Fancom One Controller.



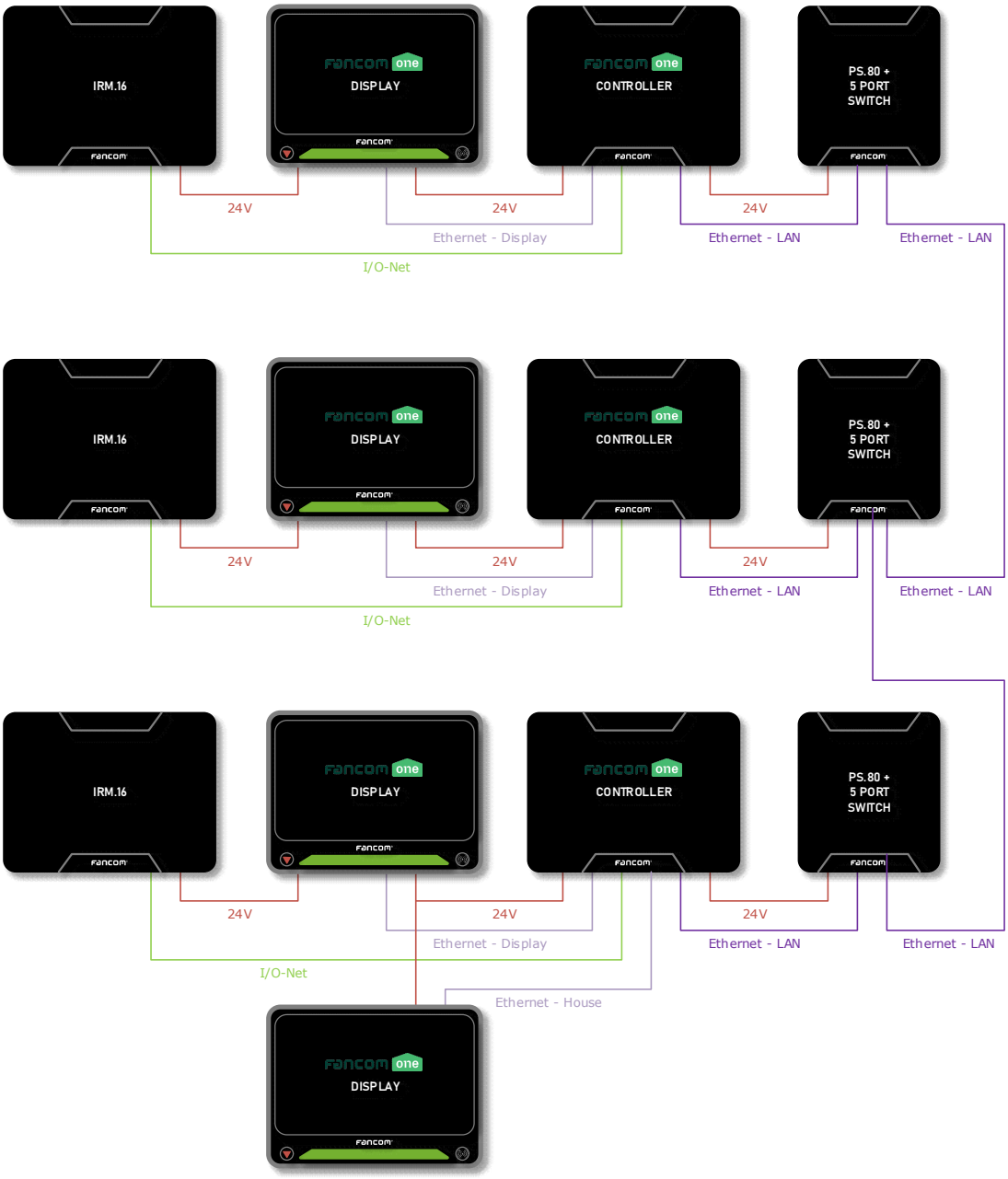
1 House – 2 Displays

Two displays are directly connected to the Fancom One Controller.



3 Houses – 4 Displays – Multi House Control

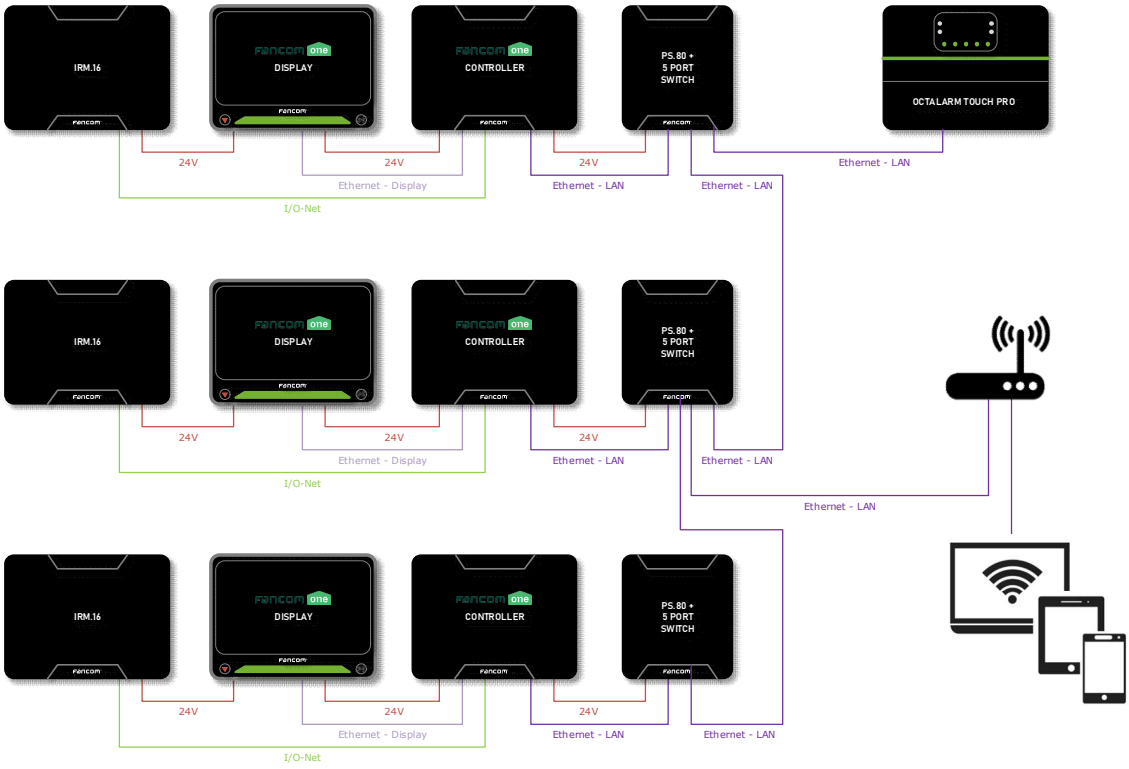
Four displays are directly connected to three Fancom One Controllers. The Fancom One Controllers are connected to the Ethernet LAN, allowing access to any Fancom One Controller from each display.



Remote access

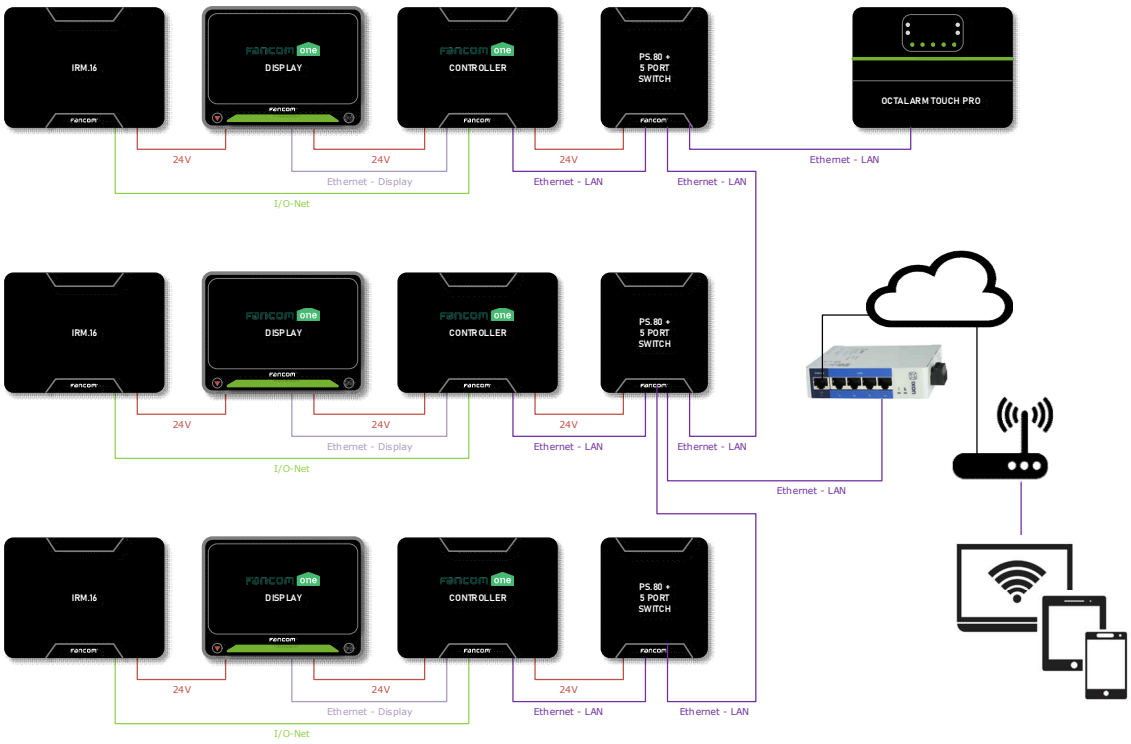
Local Network Connectivity

PCs, laptops, tablets, and smartphones can connect to the LAN Ethernet, either directly or through a wireless access point. Internet access is not required.



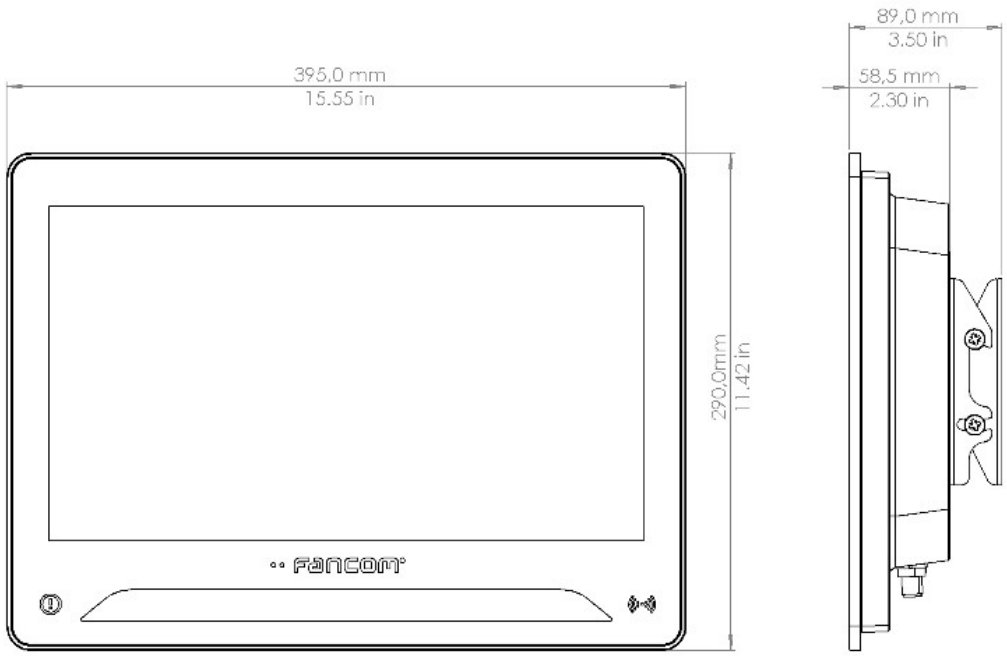
Remote Access via the Internet

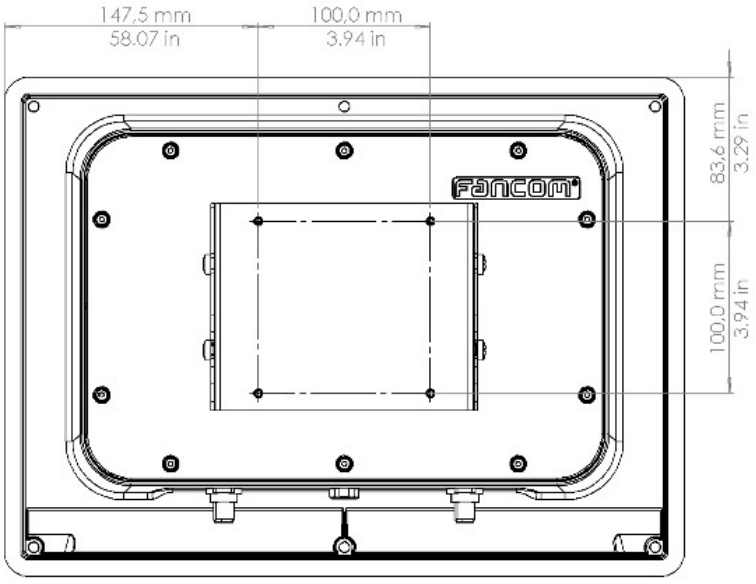
PCs, laptops, tablets, and smartphones can connect remotely via the internet. On-site, a dedicated Fancom One Router is required for secure and efficient access.



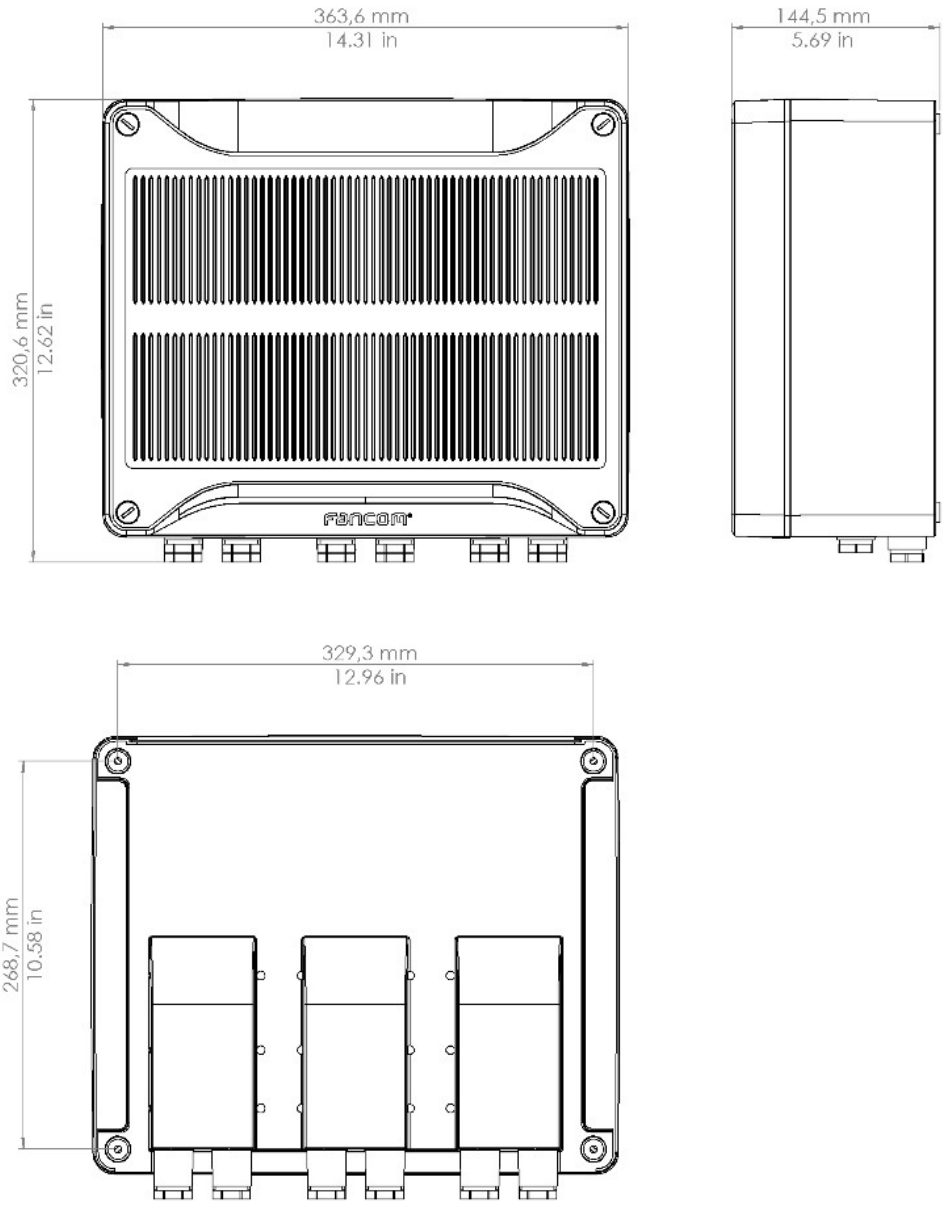
Dimensions

Fancom One User Interface 15”

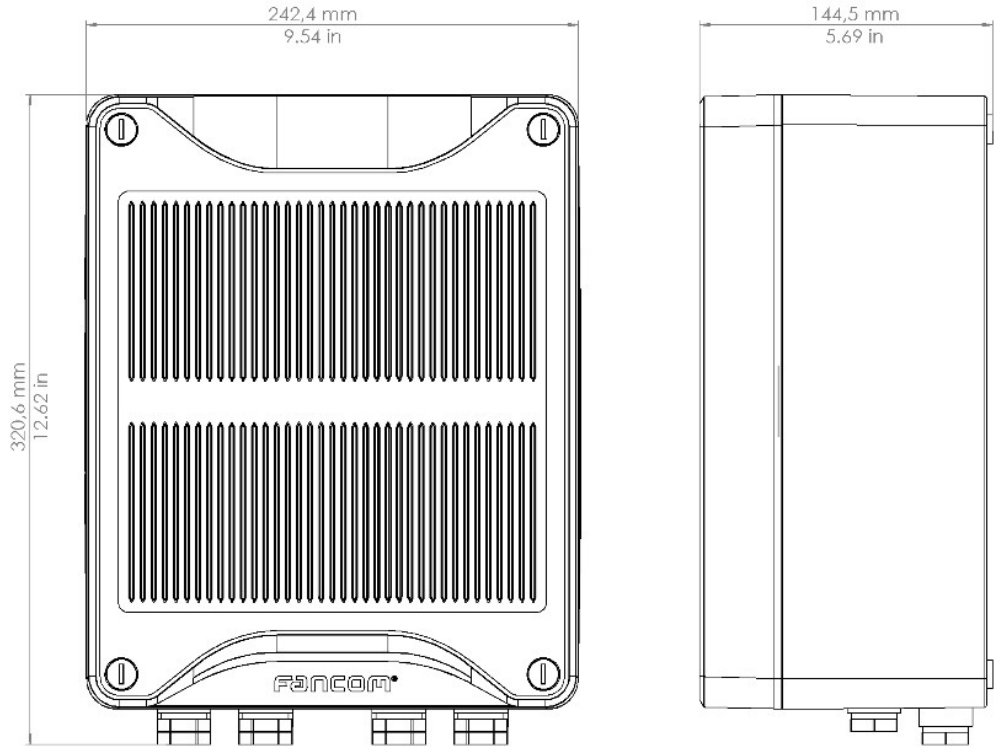




Whole House Control – IRM.16



PS.24-80


242,4 mm
9.54 in
144,5 mm
5.69 in
320,6 mm
12.62 in
208,1 mm
8.19 in
268,7 mm
11.29 in

Technical specifications

Whole House Control

Housing	
Material	ABS
Ingress Protection	IP54 (NEMA4)
UL 94 flammability rating	V-0
Dimensions	(l×w×h) 360×300×140mm
Weight (unpacked)	< 3 kg

Connector wire cross section	
Maximum. Wire connection, stranded, solid.	2.5 mm² or AWG14
Minimum. Wire connection, stranded, solid.	0.2 mm² or AWG28
Wire strip length	10 - 11 mm

Power connection	
Voltage	24 Vdc (-10% +10%)
Power feed through	Max 80 W (3,3A)
Protection Module	Polarity (+ and - pole can be switched), Resettable Fuse Local (30W 1,25A)
Diagnostics	Voltage < 20Vdc
Cable length	Max. 30 meter (24 Vdc)

I/O-Net	
Type	Multidrop 2 wire
Termination resistor	Configurable
max. number of modules	31
Transmission rate of field bus, max.	500 kBit
Max. cable length	1300 m (only Fancom 2 x 0.8 twisted pair)

Ethernet House, Display, LAN	
Type	Point to point 4 wire
Max. number of modules	128
Transmission rate of field bus, max.	10 / 100 Mbit/s
Led indicating	Activity
Max cable length	100 m (CAT5e)
Wire connection standard	T568B (RJ45)

Alarm Relay	
Output current max.	2 A
Switching voltage max.	24V AC/DC

Digital inputs	
Voltage open contact	11 V
Source impedance:	9,5 kΩ
Input voltage low	< 1V
Input voltage high	> 6V
U in max	30V
Input filter	Passive 15 µsec (66kHz)
Sensor connection	2-wire, 3-wire

Sensor power	
Voltage	12 Vdc (-5% +5%)
Maximum power consumption	0,12 W
Resettable electronic fuse	0,1 A
Protection	Short circuit and overload

Temperature input	
Absolute accuracy Sensor Fancom 0-60 °C Sensor Fancom other **Accuracy**ADC circuit	Max 0,7 °CMax. 0,2 °CMax. 0,5 °CMax. 0,2 °C
Repeat accuracy	Max 0,1 °C
Internal resistance	1 MΩ
Conversion time	100 ms
Sensor Fancom	1.5 sec
Measured temperature value, min	-50 °C
Measured temperature value, max	150 °C
Resolution	16 bits
Reverse polarity	Yes
Sensor connection	2 wire

Alarm Relay	
Accuracy	+/- 15 mV
Switching voltage max.	24V AC/DC
Conversion time	1 ms
Internal resistance	100 kΩ
Resolution	16 Bit
Response time	< 50 ms
Reverse polarity protection	Yes

Sensor connection	2, 3 and 4 wire
Type	0-5V or 0-10V

Sensor supply	
Voltage	24 Vdc (-10% +10%)
Max	25 W
Protection	Short circuit and overload
Resettable electronic fuse	1.1 A
Diagnostics	Yes, voltage < 20Vdc

Analog output	
Repeat accuracy	< 100 mV eff
Absolute Accuracy	Typ ±3 %
Actuator connection	2-wire
Output range	0-10.6V typical
Rout	200Ω
Output variable	0-10.6 V
Resolution	12 bit
Response time	100 ms
Short-circuit-proof	Yes
Temperature coefficient	20 ppm voltage
Load impedance voltage	> 1 kΩ (at >50 °C ambient temperature, max. total current = 10 mA)
Type	Output 0-10 V, 10-0 V

HMI.15

General	
Dimensions	(l×w×h) 395 x 290 x 58 mm
Weight (unpacked)	< 4 kg
Wall mounting	Vesa 100x100
Material	ABS
Ingress Protection	IP66 (NEMA4)
UL 94 flammability rating	V-0

Screen	
View angle (horizontal)	Left: 80° / Right: 80°
View angle (vertical)	Top: 80° / Bottom: 80°
Brightness	382 cd/m²
Material display front	Glass
Number of displayable colours	16,2 M

Resolution	1920 x 1080 Full HD
Type	TFT
Size	15,6 inch (344 x 193 mm)
Touch-Screen	Capacitive

House-ethernet, display, LAN	
Type	Point to point 4 wire
Max. number of modules	128
Transmission rate of field bus, max.	10 / 100 Mbit/s
Led indicating	Activity
Max cable length	100 m (CAT5e)
Wire connection standard	T568B (RJ45)

Power Input	
Voltage	24 Vdc (-10% +10%)
Max	25 W

PS.24-80

Housing	
Material	ABS
Ingress Protection	IP54 (NEMA4)
UL 94 flammability rating	V-0
Dimensions	(l×w×h) 240×300×140mm
Weight (unpacked)	< 3 kg

Power connection	
Voltage	24 Vdc (-10% +10%)
Power feed through	Max 80 W (3,3A)
Protection Module	Polarity (+ and - pole can be switched), Resettable Fuse Local (30W 1,25A)
Diagnostics	Voltage < 20Vdc
Cable length	Max. 30 meter (24 Vdc)

General

Approvals	CE
Safety	NEN-EN-IEC 61010-1: 2010
EMC	NEN-EN-IEC 61326-1: 2021
Pollution Degree	2
Overvoltage Category	II
Operating temperature range	0°C to +40°C (+32°F to +204°F)
Storage temperature range	–20°C to +50°C (+24°F to +222°F)
Relative humidity	< 95%, uncondensed
Maximum altitude	< 2000m above sea level