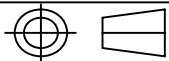



ECO.NO	REV	MARK	DETAILS	DESIGN	DATE
	1		首次发行	程安福	2021-3-23

Notes:

1. Material: 80g printing paper, white.size 297*210MM.
2. Printing: Black
3. Part number 0-ML00-3140-01-1

 <p>DIMENSION TOLERANCES UNLESS OTHERWISE SPECIFIED</p> <p>>0.0AND≤5 +/-0.055mm >5AND≤10 +/-0.060mm >10AND≤25 +/-0.075mm >25AND≤50 +/-0.100mm >50AND≤100 +/-0.150mm >100AND≤150 +/-0.200mm >150 +/-0.250mm Angular +/-0.25°</p>	 <p>青嵘科技有限公司 A&R Technologies Ltd.</p>							
	CLIENT			PART NAME		英文版说明书		
	MOULD NO	DF-2010		PART NO		0-ML00-3140-01-1		
	MATERIAL		REV	1	DESIGN	程安福	DATE	2021-03-23
	SIZE	/	SCALE	/	CHECK		DATE	
	SHEET		UNIT	mm	APPROVAL		DATE	

DF-2010 DFIR™ Motion Sensor

Operation and Specifications

SUREN

DF-2010 is built with our revolutionary patented PIR technology. Special dual-frequency infrared (DFIR™) opto-electronics offers unprecedented false alarm immunities that no other conventional PIR sensors have. By employing dual frequencies verification to confirm a true alarm, it acts like a dual-technology detector, perhaps even better without the setback of the conventional technologies used for dual-tech.

DFIR™ employs the principle that a moving animate object produces two signal frequencies. White light, electromagnetic interference, hot air, stationary changing temperature object (typical false alarm sources) produces only one signal frequency. Thus, by rejecting one-frequency signals, it rejects false alarms. The DFIR™ features Suren's Split-View™ and proprietary six-element pyros.

SENSOR INITIALIZATION

Following power-on, a DF-2010 sensor is fully operational after a one-minute warm-up. During warm-up, its LED is ON.

WALK TEST

Note: The DF-2010 should be tested once per year.

ALARM PROCESSING

DF-2010 alarm processing is designed for extreme false alarm rejection. This processing is a quantum leap above that of standard PIR motion sensors that simply count signal events. Both the Split-View™ DFIR** and the Super-View™ DFIR** detector/lens systems produce two infrared detector signals for evaluation by the DF-2010's microprocessor alarm processing system. The fields-of-view are set up so that moving objects produce two detector signals of different frequencies, while non-moving false alarm sources produce two detector signals of the same frequency.

SUPERVISION

DF-2010 supervision functions include these tests:

- Ambient temperature in-range;
- Supply voltage between 8-16Vdc;
- PIR self test okay.
- When a failure is detected, then:

- 1) The red alarm LED blinks ON/OFF every second.
- 2) Alarm relay does not re-close after an alarm signal event.

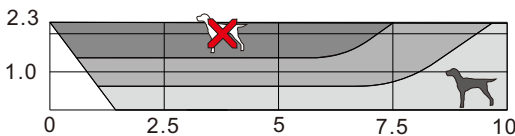
NOTE: The sensor will NOT initiate an alarm upon failure.

PET IMMUNITY

The DF-2010 is designed to allow the presence of pets (45kg or lighter) without signaling an alarm. It includes a special micro-element lens array that produces much stronger optical signals for humans than for pets 45kg or lighter. Furthermore, the optical sensitivity of each DF-2010 is factory-calibrated to ensure accurate discrimination between humans and pets.

NOTE: Pets come in many varieties. Some pets (especially larger ones with very short hair), even if lighter than 45kg, may produce enough infrared radiation to cause alarms. DF-2010 users are strongly advised to test the sensor with their own pets, in order to verify that the DF-2010 will not signal an alarm when their pets are moving within its fields of view.

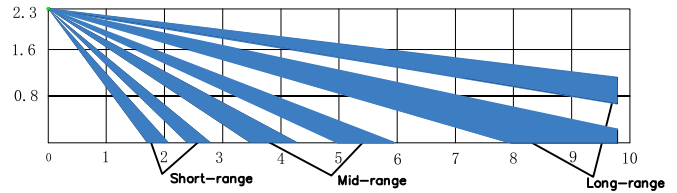
The diagram below shows the DF-2010's zones of greatest human/pet discrimination. The DF-2010 should be mounted so that pets will occupy only the lighter-colored spaces..



SPECIFICATIONS

Range: 9.8 meters

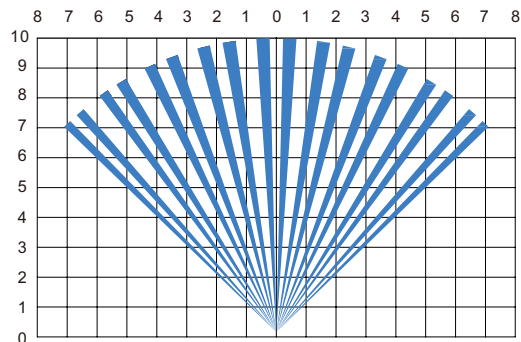
Sensor Optical View Pattern (side view, in meters)



Optical Fields-of-View:

Long-range	Mid-range	Short-range
108	30	18

Sensor Optical View Pattern (top view, in meters)



IR Sensor:

Six-elements, Digital

Power Supply:

8-16 Vdc; 18 mA at 12 Vdc

Alarm Relay:

Solid state, Form A (NC). 50 mA at 30 Vdc, 1500 V_{rms} isolation

Tamper Switch:

Form A (NC). 50 mA at 30 Vdc

Housing Material:

PC housing, HDPE lens

Dimensions:

112 x 50 x 42 mm (H x W x D)

Approvals/qualification:

CCC (Pending)
CE (Pending)

Complies with:

EN 50131

Events Detection:

SureSpot™ processing engine
DFIR™ false signal rejection

RF Immunity:

20 V/m, 10-1000 MHz;
10 V/m, 1-2 GHz

White Light Immunity:

6500 lux

Sensitivity: 3-event/5-event

Operating Temperature Range:

-10°C to +55°C

Storage:

-40°C to +60°C (-40°F to +140°F)

ACCESSORIES OPTIONS

Mounting bracket: MB-100

Note: Specifications are subject to change without notice.

Limitations of Security Products: Security products and alarm systems do not offer guaranteed protection against burglary, fire, or other emergencies. They may fail to warn for diverse reasons, including (but not limited to): power failure, dead batteries, improper installation, coverage "blind spots", coverage areas overlooked during installation, defeat by technically sophisticated intruders, component failure, or inadequate maintenance. Alarm systems should be checked weekly to ensure that all devices are working properly. AN ALARM SYSTEM IS NOT A SUBSTITUTE FOR INSURANCE.

SUREN LIMITED WARRANTY

SUREN Systems, Ltd., of Fo Tan, Shatin, Hong Kong, warrants its products to be in conformance with its own plans and specifications and to be free from defects in materials and workmanship under normal use and service for twelve months from the date of original purchase. Seller's obligation shall be limited to repairing or replacing, at its option, free of charge for materials or labor, any part which is proved not in compliance with Seller's specifications or proves defective in materials or workmanship under normal use and service. Seller shall have no obligation under this Limited Warranty or otherwise if the product is altered or improperly repaired or serviced by anyone other than Seller. For warranty service, return transportation prepaid, to SUREN Systems, Ltd., Unit 15, 12/F, Block B, Wah Sang Industrial Building, 14-18 Wong Chuk Yeung Street, Fo Tan, Shatin, Hong Kong. Seller has no obligation to attend the buyer's location to retrieve the goods or make repairs on site.

There are no warranties, expressed or implied, of merchantability, or fitness for a particular purpose or otherwise, which extend beyond the description on the face hereof. In no case shall seller be liable to anyone

for any consequential or incidental damages for breach of this or any other warranty, express or implied, or upon any other basis of liability whatsoever, even if the loss or damage is caused by its own negligence or fault.

Seller does not represent that the products it sells may not be compromised or circumvented; that the products will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; or that the products will in all cases provide adequate warning or protection. Customer understands that a properly installed and maintained alarm system may only reduce the risk of a burglary, robbery, or fire without warning, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss as a result.

Consequently, seller shall have no liability for any personal injury; property damage or other loss based on a claim the product failed to give any warning. However, if seller is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin, seller's maximum liability shall not in any case exceed the purchase price of the product, which shall be the complete and exclusive remedy against seller.

This warranty replaces any previous warranties and is the only warranty made by Seller on this product. No increase or alteration, written or verbal, of the obligations of this Limited Warranty is authorized.

U.K. Patent No: GB2414551
Patents issued and pending worldwide.

DF-2010 Installation Instructions

1: Mounting Location

A. Wall mounting:

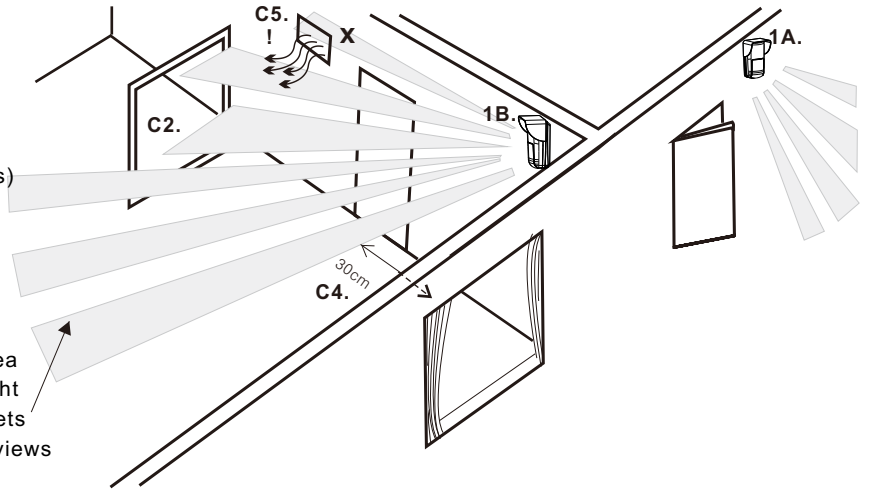
1. Sensor base fastened flat on vertical wall (± 2 degrees)

B. Bracket mounting:

1. Bracket fastened to semi-vertical surface (± 15 degrees)
2. Sensor on bracket in vertical position (± 2 degrees)

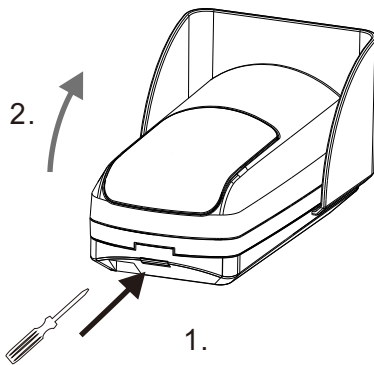
C. All mounting:

1. Height = 2.3 m above floor of monitored area
2. Clear line-of-sight from sensor to monitored area
Note: glass will block sensor's view.
3. Wall temperature similar to walls/floor of monitored area
4. Sensor aimed away from windows and reflected sunlight
5. Sensor aimed away from heaters or heater/cooler outlets
6. Sensor aimed so that likely intruder paths cross three views



2: Sensor Disassembly

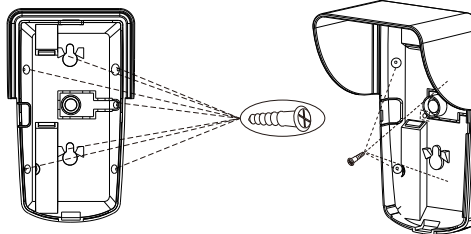
Insert screwdriver or thumbnail into the slot, at the bottom of the sensor to : (1) assemble or (2) remove base cover.



3: Base Hole Preparation

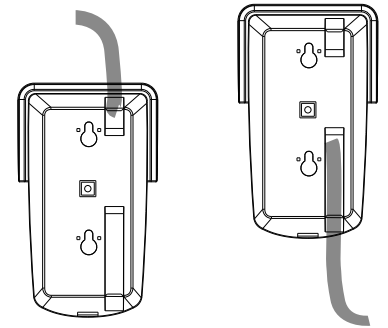
Identify necessary holes on diagram;

1. For wall mounting, knock out hole covers.
2. For corner or 45 degree wall mounting, use drill to open at least two holes at base side depressions.
3. For bracket mounting, use drill to open a 3 mm hole in the center of the square recess at the rear of the base. See 5 for more.



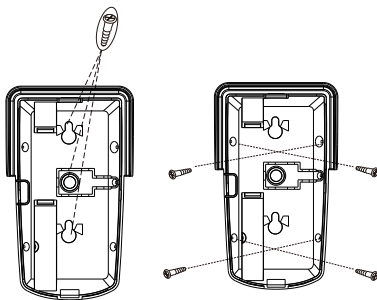
4: Cable Preparation

Remove 8 cm of cable jacket. Pass the cable wires through the selected hole. Lay cable in wire channel. Secure cable with cable tie.



5: Wall Mounting

Use screws to mount on wall or in corner.

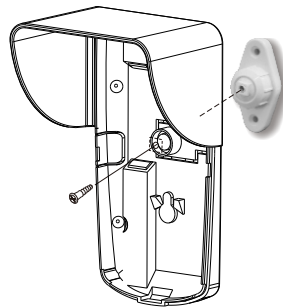


mount on wall

mount in corner

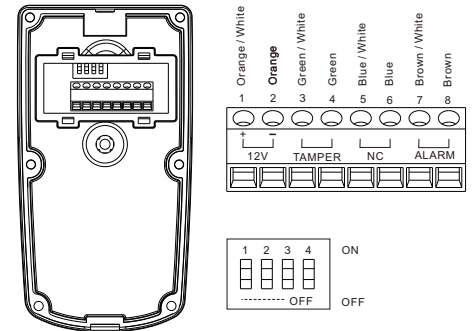
6: Bracket Mounting

Use screws to mount bracket in desired location. Use screw to mount sensor base onto bracket. Refer to 4 for setting circuit board alignment post.



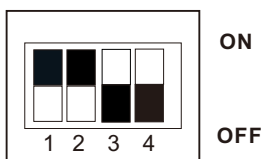
7: Wiring

Cut cable wires to appropriate length and connect wires to sensor terminal block..



8: DIP Switch Setting(S1)

Factory Default



FUNCTION	DIP Switch	ON	OFF
LED	1	Enabled	Disabled
N/A	2	N/A	N/A
PIR Sensitivity	3	High	Low
N/A	4	N/A	N/A

9: LED Indicator Operation

The chart below shows red LED indications.

DF-2010	
Sensor State	LED Display
Warm-up	ON
Alarm	ON 5 Sesonds (IF LED ENABLED)
Failure	Flashing
Normal	OFF