

## Flush Mount PIR Motion Sensor

HIR28DCVFC   HIR28DCVFC/R   HIR28DCVFC/W   HIR28DCVFC/H  
 Low-bay   Reinforced Low-bay   Wide range Low-bay   High-bay

# HYTRONIK®



### Applications

Office, classroom and commercial interior spaces where on/off control is required.

- Office / Commercial Lighting
- Classrooms
- Stairwells / Corridors

### HIR28DCVFC with on/off relay control







HIR28DCVFC is a PIR standalone motion sensor, On/Off control with relay output. It's voltage-free contact which is NO relay (normally on). Designed with a low profile for aesthetically demanding architectural projects providing a high quality sensor for simple on/off occupancy control or providing semi-automatic (absence detection) control.

An intelligent photocell is also included to prevent switching of the lights when natural daylight is available.

Setup of the sensor is carried out using a remote control handset with program memory allowing one-key commissioning where common settings are used for multiple devices.



### Features

-  On/Off control with relay output
-  Freely select NO or NC contact
- VFC: Volt-free Contact/Dry Contact – 24VDC@5A – 250VAC@5A
-  IP20/IP54 Ceiling/Surface mount box available as accessory
-  Various PIR lens and blind inserts options
-  User-friendly design for installation
-  High bay version available (up to 1.5m in height)
-  Store settings in the remote for easy commissioning when programming multiple sensors.
-  Intelligent photocell - lights and sensors only operate when needed, natural light has priority.
-  5-year warranty

### Technical Data

#### Input Characteristics

Model No.	HIR28DCVFC
Input	12-48VDC
Stand-by power	<0.5W
Output (Loading)	24VDC≤5A   250VAC≤5A
Warming-up	10s

#### Safety and EMC

EMC standard (EMC)	EN61547
Safety standard (LVD)	EN60669-1, EN60669-2-1
Certification	CB, CE, LVD, RCM

#### Environment

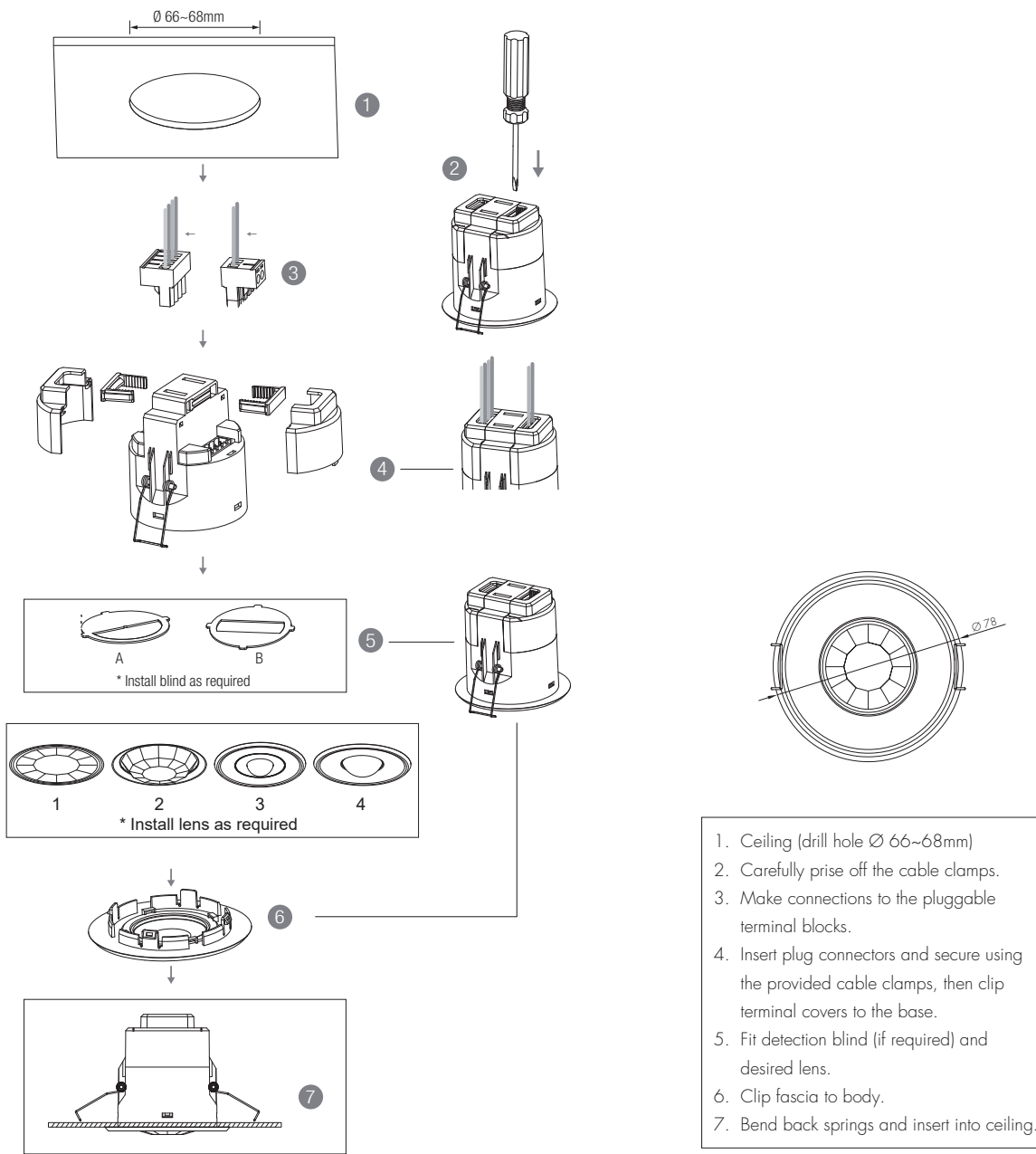
Operation temperature	Ta: -20°C ~ +50°C
IP rating	IP20

#### Sensor Data

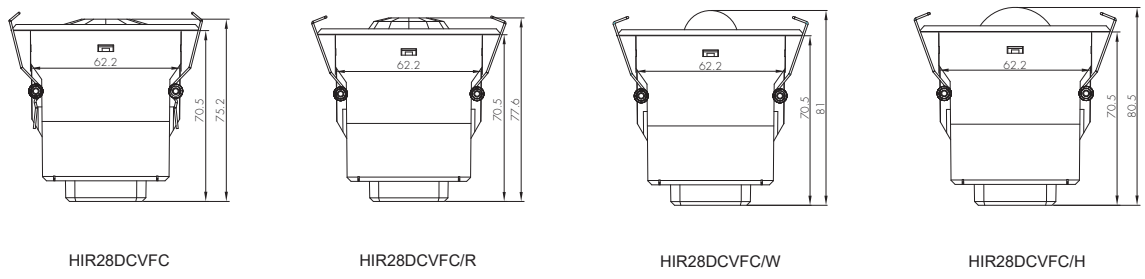
Model No.	HIR28DCVFC
Sensor Model	PIR detection
Detection range (Max.)* HIR28DCVFC	Installation Height : 6m Detection Range(Ø) : 9m
Detection range (Max.)* HIR28DCVFC/R	Installation Height : 6m Detection Range(Ø) : 10m
Detection range (Max.)* HIR28DCVFC/W	Installation Height : 6m Detection Range(Ø) : 18m
Detection range (Max.)* HIR28DCVFC/H	Installation height: 15m (forklift) 12m (person) Detection range (Ø): 24m
Detection angle	360°

\* For more details of detection range, please refer to "detection pattern" section.

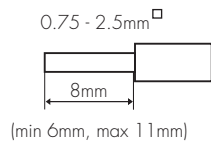
# Mechanical Structure & Dimensions



Note: We recommend the mounting distance between sensor to sensor should be more than 2m to prevent sensors from false-triggering.

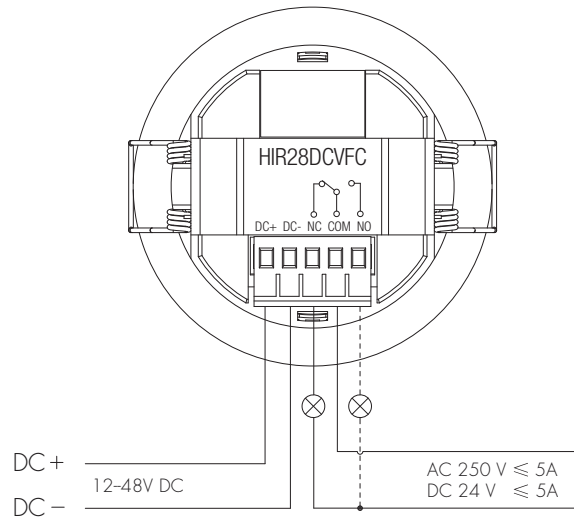


## Wire Preparation



Pluggable screw terminal. It is recommended to make connections to the terminal before fitting to the sensor.

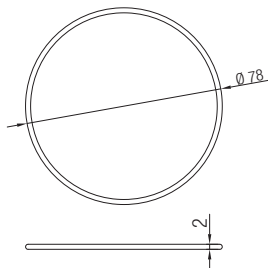
## Wiring Diagram



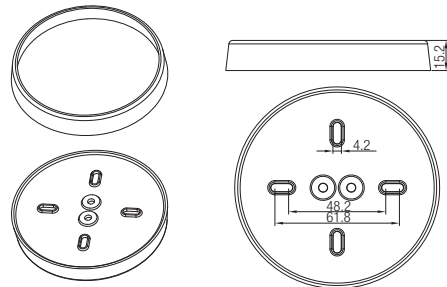
## Detection Pattern & Optional Accessories

Big and small silicon gasket used to make IP54 degree protection (mounted into HA09 housing for ceiling mount)

Small silicon water-proof gasket dimension(size:mm)



Big silicon water-proof gasket dimension(size:mm)



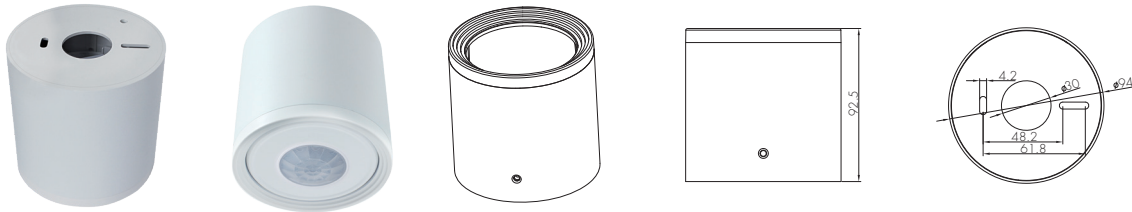
# 1. HIR28DCVFC (Low-bay)



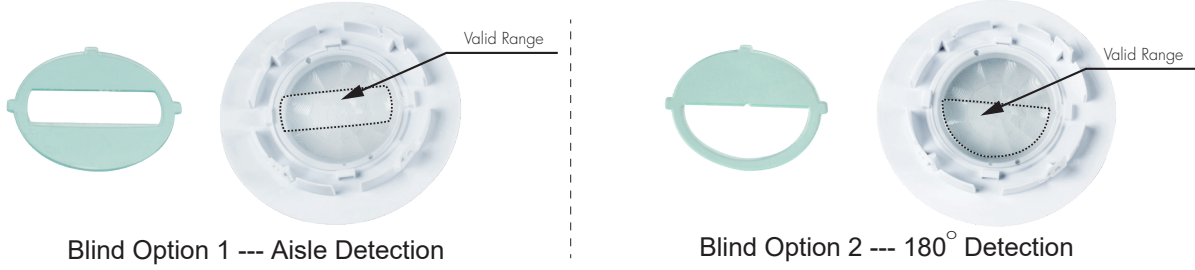
**HIR28DCVFC:** Low-bay flat lens detection pattern for **single person** @  $T_a = 20^\circ\text{C}$   
 (Recommended ceiling mount installation height **2.5m-6m**)

A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
		2.5m	max 50m <sup>2</sup> (Ø = 8m)	max 13m <sup>2</sup> (Ø = 4m)
		3m	max 64m <sup>2</sup> (Ø = 9m)	max 13m <sup>2</sup> (Ø = 4m)
		4m	max 38m <sup>2</sup> (Ø = 7m)	max 13m <sup>2</sup> (Ø = 4m)
		5m	max 38m <sup>2</sup> (Ø = 7m)	max 13m <sup>2</sup> (Ø = 4m)
		6m	max 38m <sup>2</sup> (Ø = 7m)	max 13m <sup>2</sup> (Ø = 4m)

Optional Accessory -- Ceiling/Surface Metal Mount Box: HA09/W, HA09/B, HA09/G



Optional Accessory -- Blind Insert for Blocking Certain Detection Angles



## 2. HIR28DCVFC/R (Reinforced Low-bay)

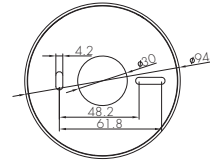
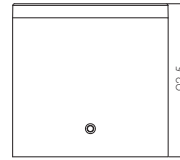
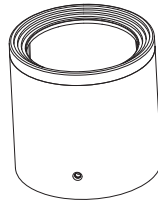


**HIR28DCVFC/R:** Low-bay convex lens detection pattern for **single person** @  $T_a = 20^\circ\text{C}$

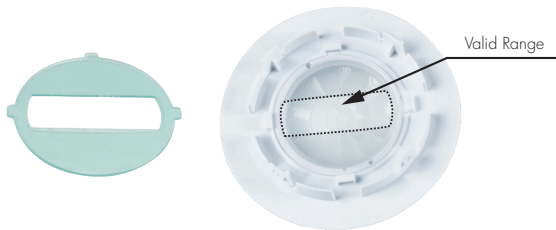
(Recommended ceiling mount installation height **2.5m-6m**)

A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
		2.5m	max 79m <sup>2</sup> (Ø = 10m)	max 20m <sup>2</sup> (Ø = 5m)
		3m	max 79m <sup>2</sup> (Ø = 10m)	max 20m <sup>2</sup> (Ø = 5m)
		4m	max 64m <sup>2</sup> (Ø = 9m)	max 20m <sup>2</sup> (Ø = 5m)
		5m	max 50m <sup>2</sup> (Ø = 8m)	max 20m <sup>2</sup> (Ø = 5m)
		6m	max 50m <sup>2</sup> (Ø = 8m)	max 20m <sup>2</sup> (Ø = 5m)

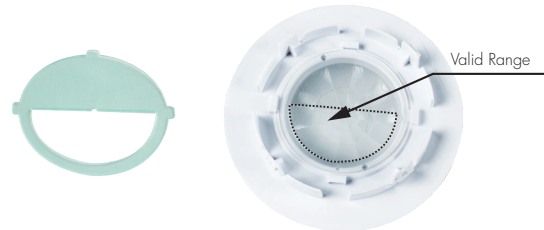
Optional Accessory -- Ceiling/Surface Metal Mount Box: HA09/W, HA09/B, HA09/G



Optional Accessory -- Blind Insert for Blocking Certain Detection Angles



Blind Option 1 --- Aisle Detection



Blind Option 2 --- 180° Detection

### 3. HIR28DCVFC/W (Wide range Low-bay)

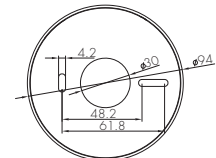
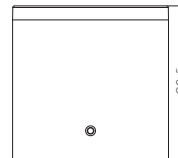
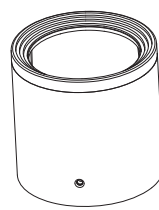


**HIR28DCVFC/W**: Low-bay convex lens detection pattern for **single person** @  $T_a = 20^\circ\text{C}$

(Recommended ceiling mount installation height **2.5m-6m**)

A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
		2.5m	max 254m <sup>2</sup> (Ø = 18m)	max 28m <sup>2</sup> (Ø = 6m)
		3m	max 254m <sup>2</sup> (Ø = 18m)	max 28m <sup>2</sup> (Ø = 6m)
		4m	max 154m <sup>2</sup> (Ø = 14m)	max 28m <sup>2</sup> (Ø = 6m)
		5m	max 113m <sup>2</sup> (Ø = 12m)	max 28m <sup>2</sup> (Ø = 6m)
		6m	max 79m <sup>2</sup> (Ø = 10m)	max 13m <sup>2</sup> (Ø = 4m)

Optional Accessory --- Ceiling/Surface Metal Mount Box: HA09/W, HA09/B, HA09/G



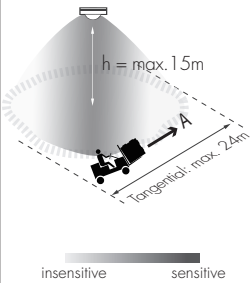
## 4. HIR28DCVFC/H (High-bay)



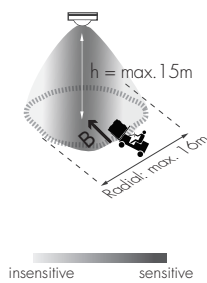
**HIR28DCVFC/H: High-bay lens detection pattern for forklift @ Ta = 20°C**

(Recommended ceiling mount installation height **10m-15m**)

A: Tangential movement



B: Radial movement



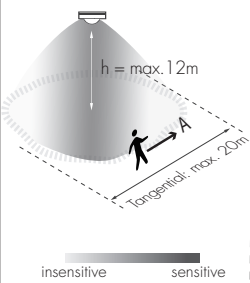
Mount height	Tangential (A)	Radial (B)
10m	max 380m <sup>2</sup> (Ø = 22m)	max 201m <sup>2</sup> (Ø = 16m)
11m	max 452m <sup>2</sup> (Ø = 24m)	max 201m <sup>2</sup> (Ø = 16m)
12m	max 452m <sup>2</sup> (Ø = 24m)	max 201m <sup>2</sup> (Ø = 16m)
13m	max 452m <sup>2</sup> (Ø = 24m)	max 177m <sup>2</sup> (Ø = 15m)
14m	max 452m <sup>2</sup> (Ø = 24m)	max 133m <sup>2</sup> (Ø = 13m)
15m	max 452m <sup>2</sup> (Ø = 24m)	max 113m <sup>2</sup> (Ø = 12m)



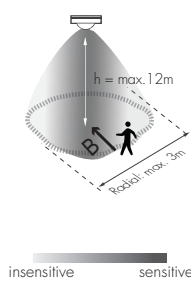
**HIR28DCVFC/H: High-bay lens detection pattern for single person @ Ta = 20°C**

(Recommended ceiling mount installation height **2.5m-12m**)

A: Tangential movement

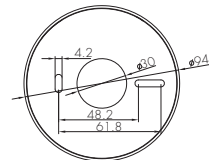
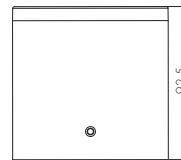


B: Radial movement

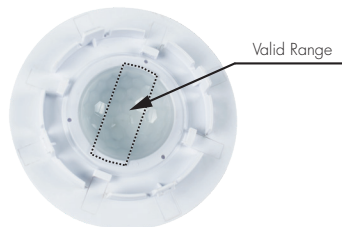


Mount height	Tangential (A)	Radial (B)
2.5m	max 50m <sup>2</sup> (Ø = 8m)	max 7m <sup>2</sup> (Ø = 3m)
6m	max 104m <sup>2</sup> (Ø = 11.5m)	max 7m <sup>2</sup> (Ø = 3m)
8m	max 154m <sup>2</sup> (Ø = 14m)	max 7m <sup>2</sup> (Ø = 3m)
10m	max 227m <sup>2</sup> (Ø = 17m)	max 7m <sup>2</sup> (Ø = 3m)
11m	max 269m <sup>2</sup> (Ø = 18.5m)	max 7m <sup>2</sup> (Ø = 3m)
12m	max 314m <sup>2</sup> (Ø = 20m)	max 7m <sup>2</sup> (Ø = 3m)

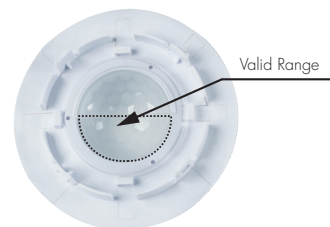
Optional Accessory --- Ceiling/Surface Metal Mount Box: HA09/W, HA09/B, HA09/G



Optional Accessory --- Blind Insert for Blocking Certain Detection Angles



Blind Option 1 --- Aisle Detection



Blind Option 2 --- 180° Detection

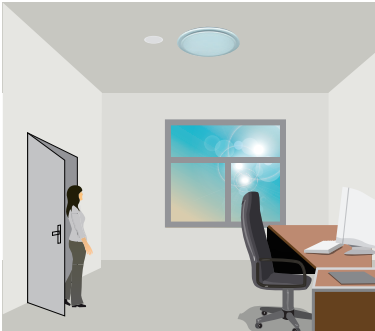
## Functions and Features

### 1 On/ off Control

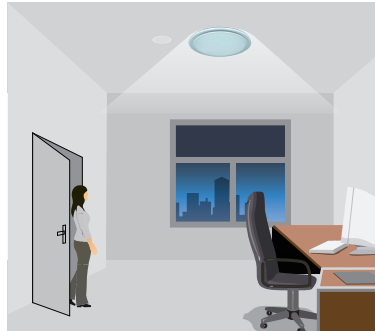
This sensor is a motion switch, which turns on the light upon detection of motion, and turns off after a pre-selected hold-time when there is no movement. A daylight sensor is also built in to prevent the light from switching on when there is sufficient natural light.

### 2 Intelligent Photocell (daylight detection prior to motion detection)

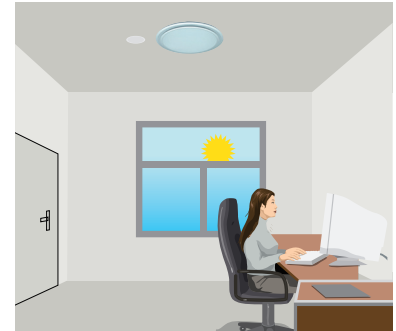
The built-in photocell will also automatically turn off the light when the ambient natural light exceeds the programmed lux level for more than 5min, regardless of whether motion is detected or not.



With sufficient natural light, the light does not switch on when presence is detected.



With insufficient natural light, the sensor switches on the light automatically when presence is detected.



The sensor switches off the light when natural light is sufficient, even with presence.

## Settings (Remote Control HRC-12)

ON / OFF

### Permanent ON/OFF function

Press button "ON/OFF" to select permanent ON or permanent OFF mode.

\* Press button "AUTO", "RESET" or "Ambient" to quit this mode.

The mode will change to AUTO Mode after power failure.

RESET

### Reset Settings

Press button "RESET", all settings go back to default values as below:

Detection range: 100%; Hold-time: 5min; Lux disabled

AUTO

### Sensor mode

Press "Auto Mode" button, the sensor starts to function and all settings remain the same as the latest status before the light is switched on/off.

SEMI  
AUTO

### SEMI-AUTO mode

This button is disabled.



HRC-12



### Daylight threshold

Press buttons in zone "Daylight threshold" to set daylight sensor at 2Lux / 10Lux / 50Lux / 100Lux / 300Lux / 500Lux / Disable.

### Ambient daylight threshold

Press button "Ambient", the surrounding lux level is sampled and set as the new daylight threshold.

### Hold-time

Press buttons in zone "hold-time" to set the hold-time at 5sec / 1min / 5min / 10min / 15min / 30min / 60min.

## Additional Information / Documents

1. Regarding precautions for PIR sensor installation and operation, please kindly refer to [www.hytronik.com/download ->knowledge ->PIR Sensors - Precautions for Product Installation and Operation](http://www.hytronik.com/download->knowledge->PIR%20Sensors%20-%20Precautions%20for%20Product%20Installation%20and%20Operation)
2. Regarding Hytronik standard guarantee policy, please refer to [www.hytronik.com/download ->knowledge ->Hytronik Standard Guarantee Policy](http://www.hytronik.com/download->knowledge->Hytronik%20Standard%20Guarantee%20Policy)