

ENOC SYSTEM AB  
Box 159  
SE-334 23 Anderstorp

## Classification of degree of protection provided by enclosure

(1 appendix)

### Test object

One Fs1 cabinet.



### SP Technical Research Institute of Sweden Electronics - Product Safety

Performed by

Examined by

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## 1 Commission

Classification of degree of protection provided by enclosure.

Standard: EN 60529:1991 + A1:2000 + A2:2013.

IEC 60529:1989 + A1:1999 + A2:2013.

IP-class: IP54, category 2 according to instructions given by the client.

## 2 Client

ENOC SYSTEM AB, Box 159, 334 23 Anderstorp, Sweden.

## 3 Test object

One Fs1 cabinet.

Dimensions 2000 mm x 800 mm x 800 mm (H x W x D).

Refer to photographs in appendix 1.

The test item was delivered to SP 2016-05-17.

## 4 Performance and result

Testing was performed according to the specifications below.

Standard: EN 60529:1991 + A1:2000 + A2:2013.

IEC 60529:1989 + A1:1999 + A2:2013.

IP-class: IP54, category 2.

Method: SP-Method 1486:2015.

Testing was carried by Henrik Andersson during the period from 2016-05-18 to 2016-05-19.

The test results apply to the tested item only.

### 4.1 Atmospheric conditions

Temperature: 20 °C ± 1 °C.

Relative humidity: 35 % ± 5 %.

Air pressure: 100 kPa ± 1 kPa.

### 4.2 General test conditions

The tests were performed with the cabinet in its normal vertical position of use.

### 4.3 Test with probe (IP5X)

The test was performed with a  $\varnothing 1$  mm test probe pushed against the test item with a force of 1 N.

Test equipment.

Test probe: SP inventory No. 501890.

Dynamometer: SP inventory No. 501913.

Measuring uncertainty.

Force:  $\pm 0.11$  N.

### 4.4 Dust test (IP5X)

The test item was exposed to talcum powder in a dust chamber during 8 h.

The amount of talcum powder was 2 kg per m<sup>3</sup> of the test chamber volume.

Test equipment.

Dust chamber.

Stopwatch: SP inventory No. 501336.

Measuring uncertainties.

Time:  $\pm 10$  min.

### 4.5 Water spray test (IPX4)

The test item was exposed to water spray from all directions during 7 min and 40 s (1 min/m<sup>2</sup>), by means of a hand-held spray nozzle.

The water flow was 10 l/min and the distance between the spray nozzle and the test item was 0.3 m-0.5 m.

The temperature of the fresh water was 20 °C.

Test equipment.

Spray nozzle: SP inventory No. 501250.

Water flow meter: SP inventory No. 501880.

Frequency counter: SP inventory No. 503436.

Thermometer: SP inventory No. 502195.

Stopwatch: SP inventory No. 501336.

Measuring uncertainties.

Water flow:  $\pm 4.7$  %.

Time:  $\pm 3.5$  s.

## **4.6 Result**

The tested Fs1 cabinet fulfilled the IP54 category 2 requirements.

The test probe did not penetrate the enclosure.

No dust did penetrate the enclosure.

No water did penetrate the enclosure.

Appendix

Appendix 1: Photographs

## Appendix 1

### Photographs



Photograph 1: Fs1 cabinet

## Appendix 1



Photograph 2: Fs1 cabinet

## Appendix 1



Photograph 3: Fs1 cabinet, top



Photograph 4: Fs1 cabinet, bottom

## Appendix 1



Photograph 5: Fs1 cabinet, door opened



## Appendix 1



Photograph 6: Fs1 cabinet, door opened