

MESSRS:

Date of issue : 9. June . 2003**Issue No : V 2.1**

SPECIFICATONS

| | |
|---------------------|---|
| Product Name | GMC-655N/P |
| Function | 23x AF Zoom camera Module |
| Part No. | |
| Application | For Built-in High Speed P/T Dome |
| Approval | |

Issued by :**Checked by :****Approved by :****Honeywell co., Ltd**
HS/CCTV CoE

1. General Specifications

1.1 Specifications of GMC-655N , NTSC

| | |
|------------------------------|--|
| 1) Scanning system | 2:1 interlace |
| -- Scanning frequency (H) | 15.734 kHz |
| -- Scanning frequency (V) | 59.94 Hz |
| 2) Pickup device | 1/4 " SONY New Super HAD CCD |
| 3) Total pixels | 410,000 pixels (811(H) X 508(V)) |
| 4) Effective pixels | 380,000 pixels (768(H) X 494(V)) |
| 5) Signal to Noise ratio | more than 49 d B |
| 6) Horizontal Resolution | more than 470 TV lines |
| 7) Lens specifications | |
| -- Focal length | f = 3.8 ~ 87.4 mm |
| -- Zoom ratio | 23 x |
| -- Relative aperture | F 1.6 (WIDE) ~ F 3.8 (TELE) |
| -- Lens construction | 10 Elements in 7 groups (including 2 aspherical lenses) |
| -- Focus and Zoom motor | Stepping motor |
| -- Iris | Galvanometer |
| 8) Digital zoom ratio | x24 ~ x184 can be adjustable |
| 9) Sync system | Internal / External (LINE pulse lock) Auto detecting selectable |
| 10) Minimum illumination | 1.0 lx (30 IRE , AGC 34dB) |
| 11) On screen display | On / Off |
| 12) Video output | Composite output 75 ohm terminated 1.0Vpp |
| 13) Camera remote control | RS-232C TTL |
| 14) Camera detail functions | |
| ① Zoom speed | High speed 4.0 sec (Optical Zoom only) High / Medium / Low Speed selectable |
| ② Focus speed | Less than 1.0 sec |
| ③ AF Sensitivity | High : It has high reaction speed of AF Low : Better focus stability |
| ④ AE Sensitivity | High / Low Less than 1 sec in case of "High" mode |
| ⑤ Sharpness control | 15 steps |
| ⑥ brightness control | 0 ~ 99 steps |
| ⑦ white balance control | ATW / AWC / INDOOR / OUTDOOR / MWB |
| ⑧ AGC control | 8dB ~ 38dB adjustable |
| ⑨ Shutter speed control | 28 Steps |
| ⑩ Flicker less | ON / Off (Shutter speed 1/100) |
| ⑪ Back light compensation | On / Off / Auto |
| ⑫ Zoom / Focus preset | 64 position preset |
| ⑬ Mirror mode | On / Off |
| ⑭ Negative mode | On / Off |
| 15) Operating temperature | -5 °C ~ 60 °C (Recommendation -5 °C ~ 50 °C) |
| 16) Operating Humidity | 0 % RH ~ 90 % RH |
| 17) Storage temperature | -10 °C ~ 60 °C , 0 % RH ~ 90 % RH |
| 18) Supplied power | 12 V ± 1 V |
| 19) Power consumption | Max 4.5 W (Motor active) , 3.0W (Motor Stop) |
| 20) Dimensions (W x H x D) | 46.6 x 54 x 82 (W x H x D) |
| 21) Weight | 230g |

1-2. Specifications of GMC-655P , PAL

| | |
|------------------------------|--|
| 1) Scanning system | 2:1 interlace |
| -- Scanning frequency (H) | 15.625 kHz |
| -- Scanning frequency (V) | 50 Hz |
| 2) Pickup device | 1/4 " SONY New Super HAD CCD |
| 3) Total pixels | 470,000 pixels (795(H) X 596(V)) |
| 4) Effective pixels | 440,000 pixels (752(H) X 582(V)) |
| 5) Signal to Noise ratio | more than 49 d B |
| 6) Horizontal Resolution | more than 450 TV lines |
| 7) Lens specifications | |
| -- Focal length | f = 3.8 ~ 87.4 mm |
| -- Zoom ratio | 23 x |
| -- Relative aperture | F 1.6 (TELE) ~ F 3.8 (WIDE) |
| -- Lens construction | 10 Elements in 7 groups (including 2 aspherical lenses) |
| -- Focus and Zoom motor | Stepping motor |
| -- Iris | Galvanometer |
| 8) Digital zoom ratio | x24 ~ x184 can be adjustable |
| 9) Sync system | Internal / External (LINE pulse lock) Auto detecting selectable |
| 10) Minimum illumination | 1.0 lx (30 IRE , AGC 34dB) |
| 11) On screen display | On / Off |
| 12) Video output | Composite output 75 ohm terminated 1.0Vpp |
| 13) Camera remote control | RS-232C TTL |
| 14) Camera detail functions | |
| ① Zoom speed | High speed 4.8 sec (Optical Zoom only) High / Medium / Low Speed selectable |
| ② Focus speed | Less than 1.0 sec |
| ③ AF Sensitivity | High : It has high reaction speed of AF Low : Better focus stability |
| ④ AE Sensitivity | High / Low Less than 1 sec in case of "High" mode |
| ⑤ Sharpness control | 15 steps |
| ⑥ brightness control | 0 ~ 99 steps |
| ⑦ white balance control | ATW / AWC / INDOOR / OUTDOOR / MWB |
| ⑧ AGC control | 8dB ~ 38dB adjustable |
| ⑨ Shutter speed control | 28 Steps |
| ⑩ Flicker less | ON / Off (Shutter speed 1/120) |
| ⑪ Back light compensation | On / Off / Auto |
| ⑫ Zoom / Focus preset | 64 position preset |
| ⑬ Mirror mode | On / Off |
| ⑭ Negative mode | On / Off |
| 15) Operating temperature | -5 °C ~ 60 °C (Recommendation -5 °C ~ 50 °C) |
| 16) Operation Humidity | 0 % RH ~ 90 % RH |
| 17) Storage temperature | -10 °C ~ 60 °C , 0 % RH ~ 90 % RH |
| 18) Supplied power | 12 V ± 1 V |
| 19) Power consumption | Max 4.5 W (Motor active), 3.0W (Motor Stop) |
| 20) Dimensions (W x H x D) | 46.6 x 54 x 82 (W x H x D) |
| 21) Weight | 230g |

2. Quality assurance tests

1) Normal function & performance tests

- Condition : $25\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$, 60 %RH
- Check the camera's basic function and performance with given test procedure .

2) Operating temperature and humidity

- Condition : $-5\text{ }^{\circ}\text{C} \sim 60\text{ }^{\circ}\text{C}$, 0%RH ~ 90%RH (Recommendation $-5\text{ }^{\circ}\text{C} \sim 50\text{ }^{\circ}\text{C}$)

3) Accelerated life test

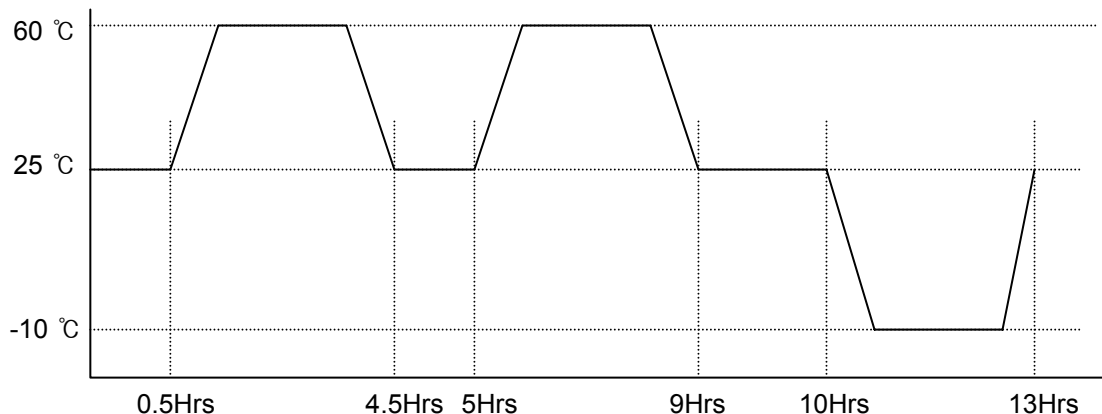
- Condition : $60\text{ }^{\circ}\text{C}$, 90 %RH , 168Hrs
- Camera status : Apply a proper power to testing unit.
- Check basic function and performance of camera.

4) Tests for storage temperature and humidity with carton

- Condition : $-15\text{ }^{\circ}\text{C}$, 0%RH , 48Hrs
- $60\text{ }^{\circ}\text{C}$, 90%RH , 48Hrs
- After Leaving the carton at above condition , check the function and performance of camera.

5) Accelerated cycling test

- Condition : $-10\text{ }^{\circ}\text{C} \sim 60\text{ }^{\circ}\text{C}$, 0%RH ~ 90%RH
- Camera status : Apply a proper power to testing unit.
- Cycle conditions :



- Cycling tests are performed 10 times repeatedly . (Total test times are 130 hours)
- After this test , moving it at normal temperature and check the camera's functions 2 hours later.

6) Vibration test (with carton)

- Condition : 1G , frequency 10 ~ 55 Hz
- Check the camera's operations after testing each directions X,Y,Z for 2 hours duration of a vibration.

7) Drop test (with carton)

- Drop the testing unit under conditions of height 0.7m , one corner , 3 edges , 6 surfaces .
- Check the camera's operations .

8) Electrostatic test

- Condition : In air 8KV , contact 4KV
- During this test is performed , Check the camera operations .

9) EFT/B test

- Condition : Power line ---> more than 1 levels (less than 1KV)
- signal and communications line ---> more than 3 levels (less than 1KV)

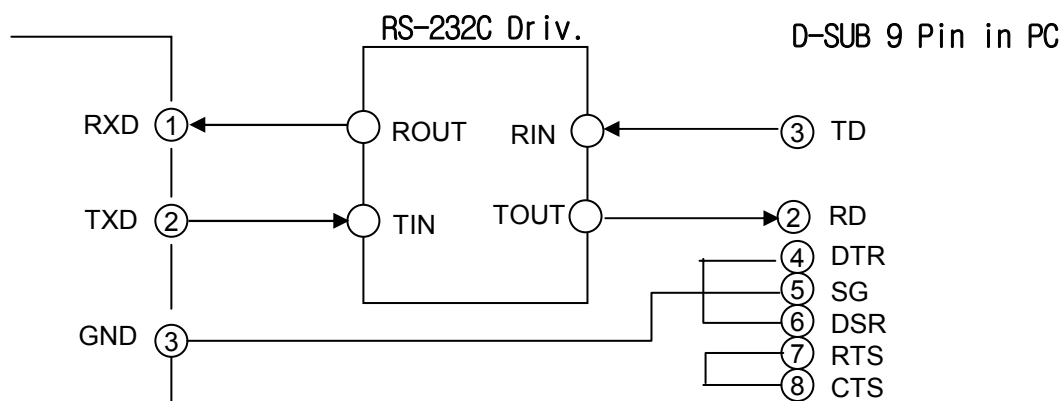
3. User interface guide for installation

- 1) Connector Pin configurations ; Maker : ELCO , part no. : 00-6200-097-052-800
Description : 1.0mm pitch flexible Ribbon cable

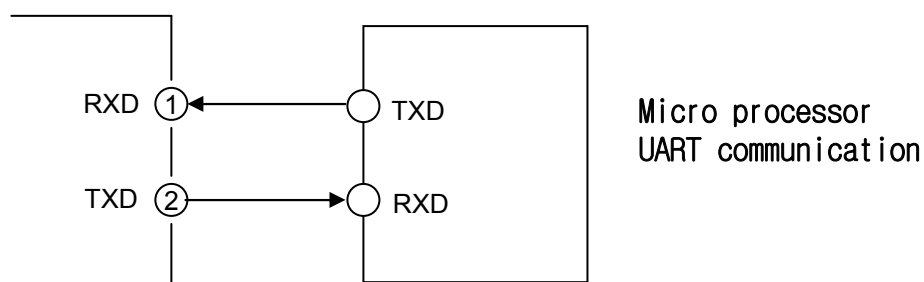
| Pin description | I/O | Explanation |
|-----------------|-----|---|
| 1 RXD | I | For communication input from camera , CMOS level |
| 2 TXD | O | For communication output to camera , CMOS level |
| 3 GND | | Pair ground with communication |
| 4 12V IN | I | DC Power supply input , $12V \pm 1V$ |
| 5 GND | | Pair ground with power supply |
| 6 VIDEO OUT | O | Composite video output , (75 ohm terminated) |
| 7 GND | | Pair ground with video output |
| 8 VD Pulse IN | I | For external synchronization , vertical sync pulse in |
| 9 GND | | Pair ground with external VD pulse input |

- 2) Applications for camera control

- ① Camera control method through communication with PC

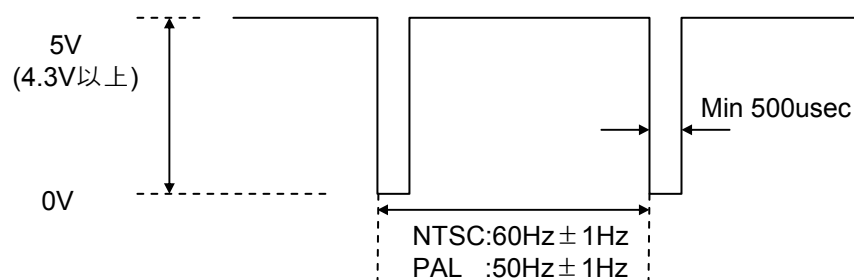


- ② Camera control method through other micro processor



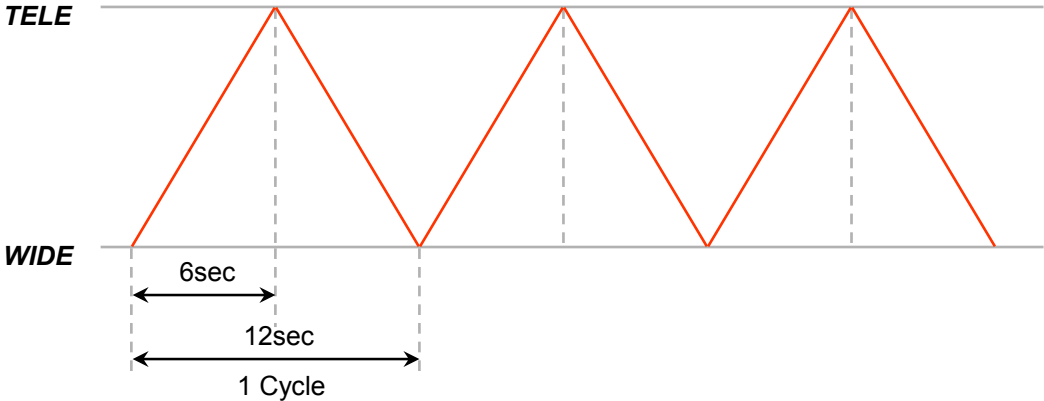
- 3) Line pulse (vertical drive pulse) for external synchronization (falling edge triggering)
; input level range : 3.0 ~ 5.0 V

input frequency range : in case of NTSC 60 Hz \pm 0.5Hz
in case of PAL 50 Hz \pm 0.5Hz

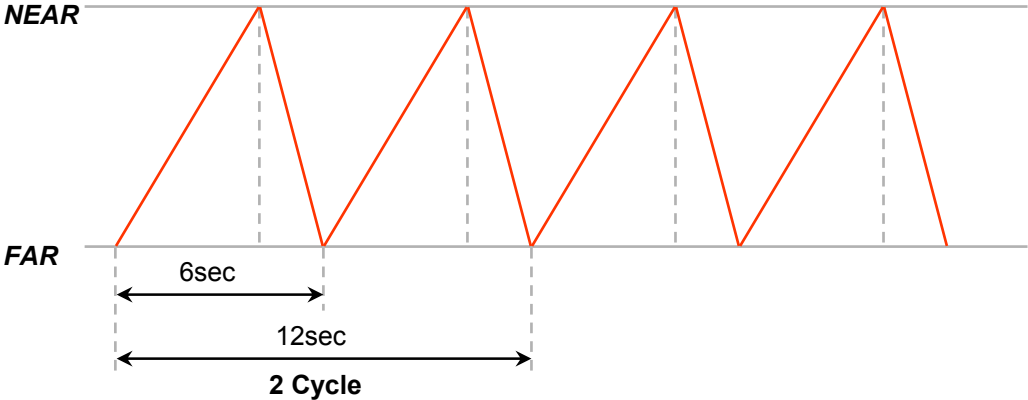


4. LENS TEST

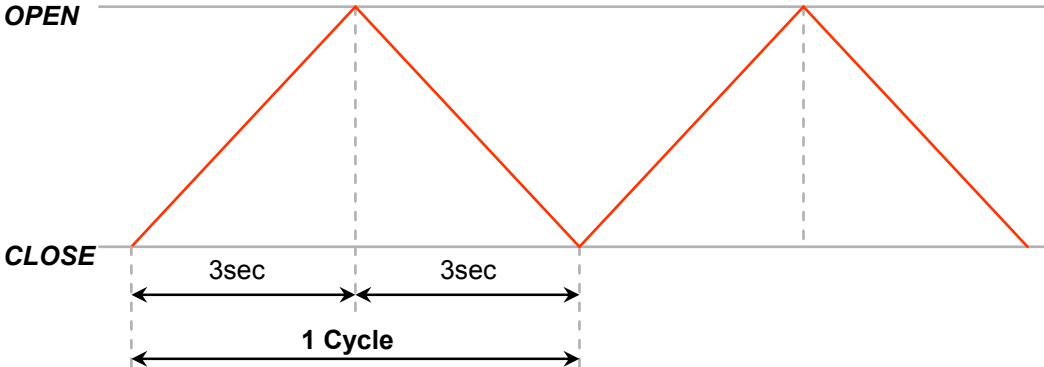
1) Zoom Motor ; More than 1,000,000 cycles



2) Zoom Motor ; More than 1,000,000 cycles



3) Iris Meter ; More than 500,000 Cycles



5. User's manual for operations

Refer to Appendix A.

6. Measurement specifications

Refer to Appendix B.

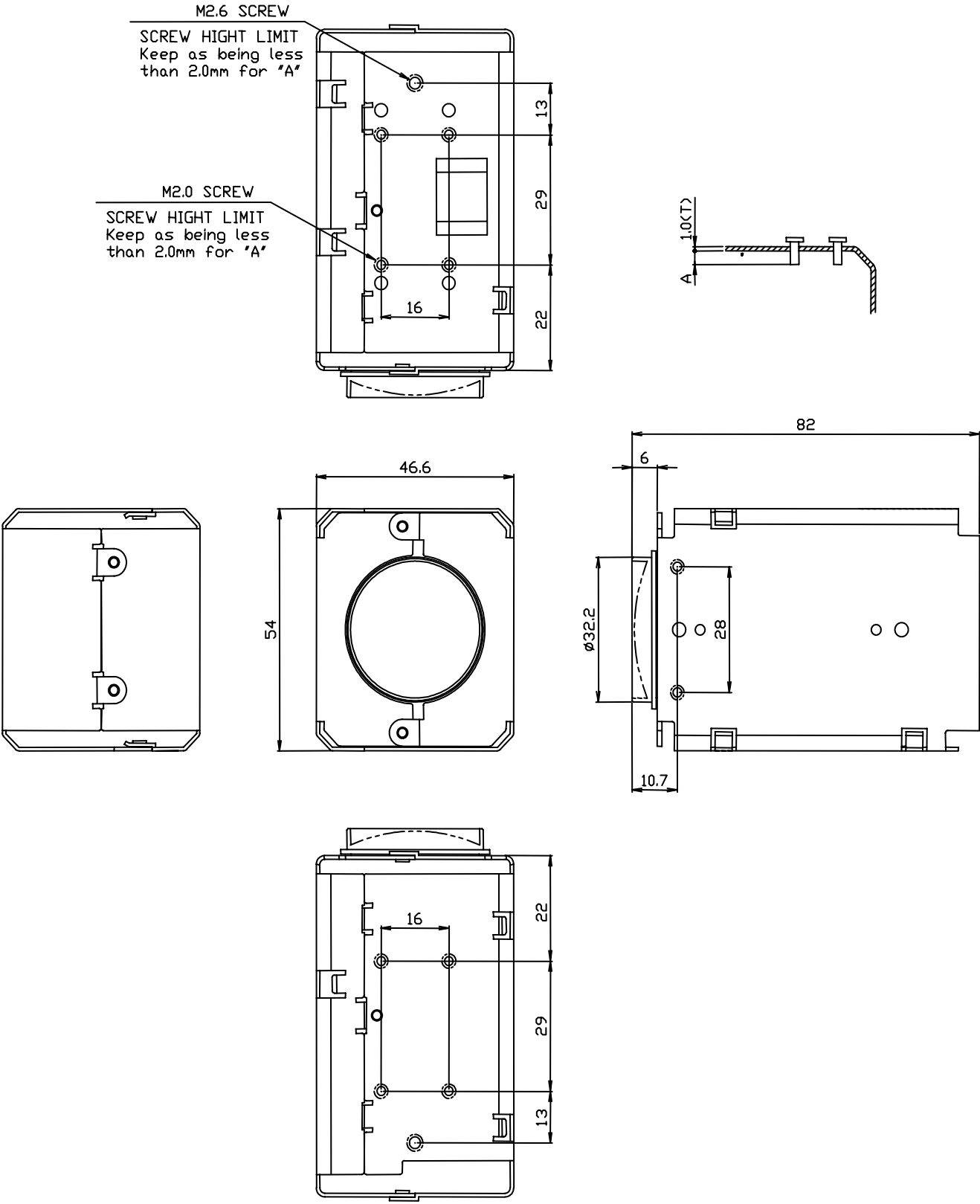
7. Communication protocol

Refer to Appendix C.

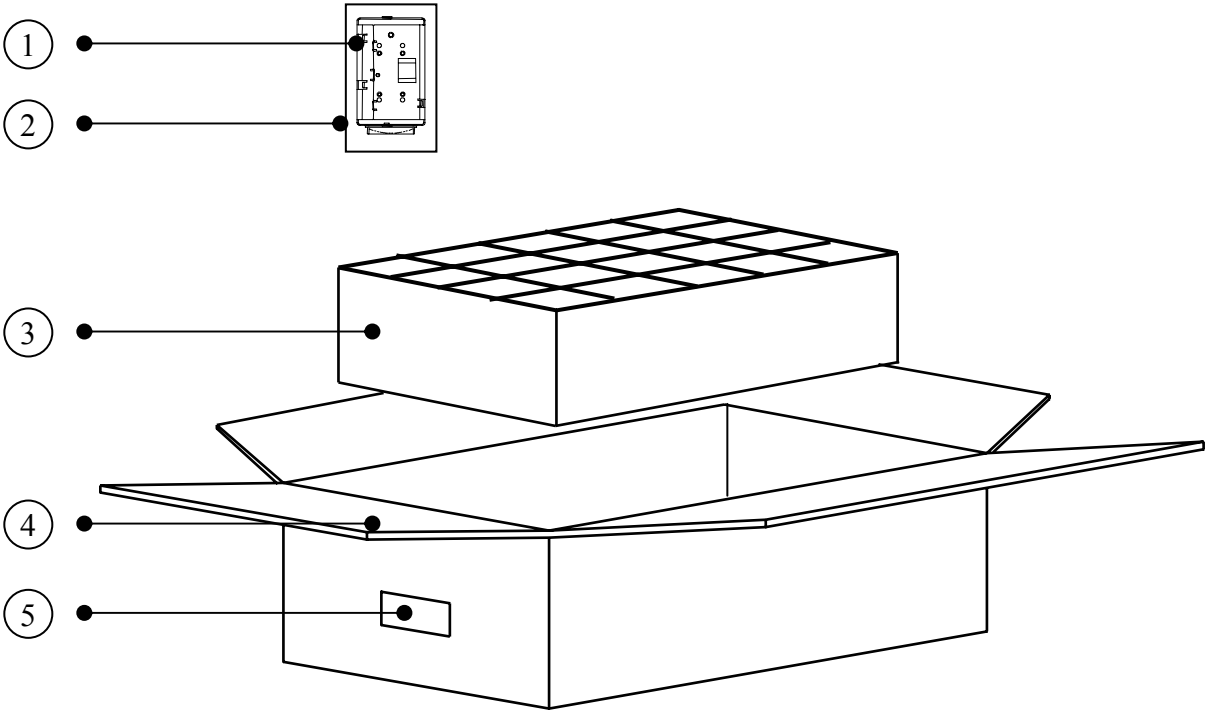
8. Optional accessories

- Flat-flex cable 200 mm (P/N : G-958076-09-200)
- Remote control board for installation (P/N :)

9. Overall Dimensions



10. Carton Dimensions



| NO | ITEM | ITEM NO | QT'Y |
|----|--------------|-----------------|------|
| 1 | MODULE ASSY | | 20 |
| 2 | PE BAG | N130x150x0.05T | 20 |
| 3 | CUSHION | G-110508 | 0.05 |
| 4 | BOX | G-110509 | 0.05 |
| 5 | LABEL BOX | G-107155-200 | 0.05 |
| 6 | 9P FFC CABLE | G-958076-09-200 | 20 |