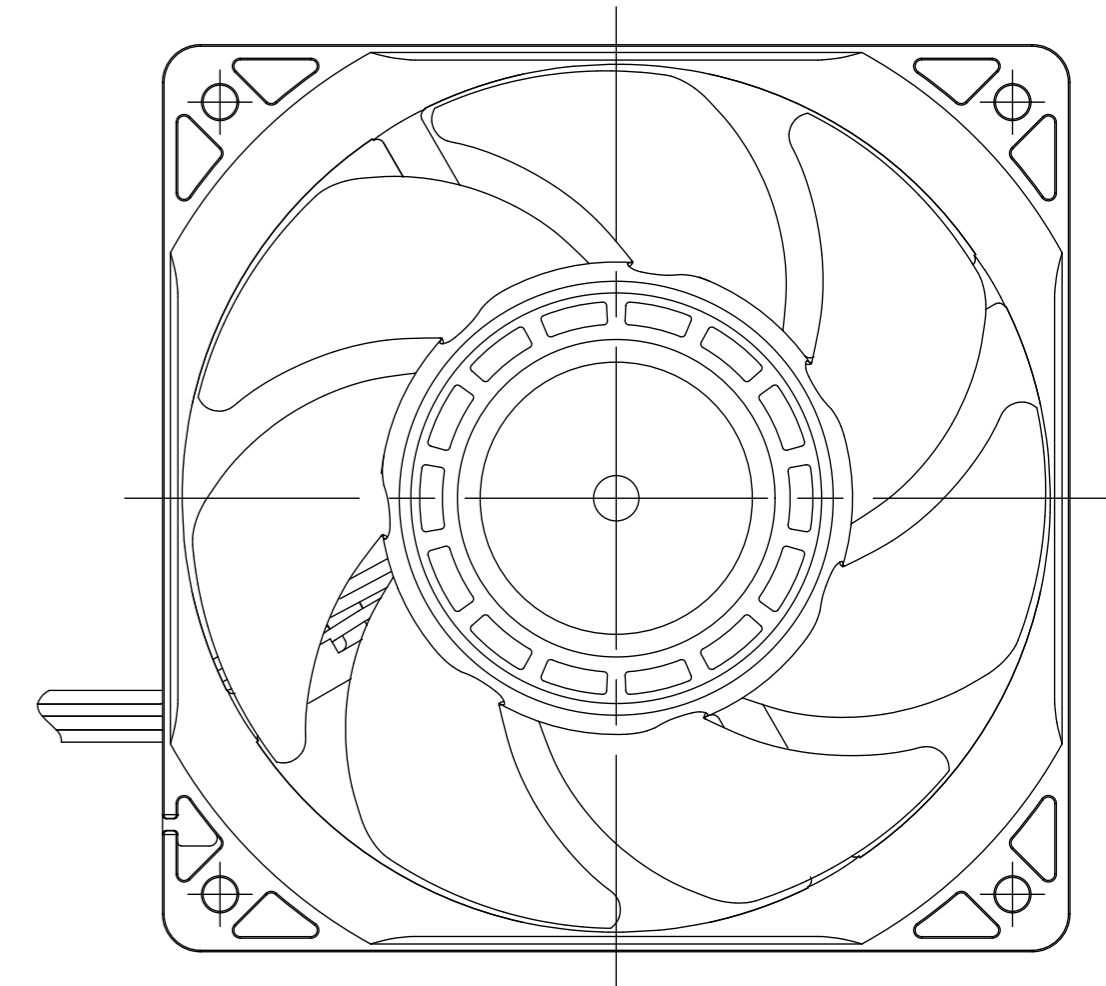
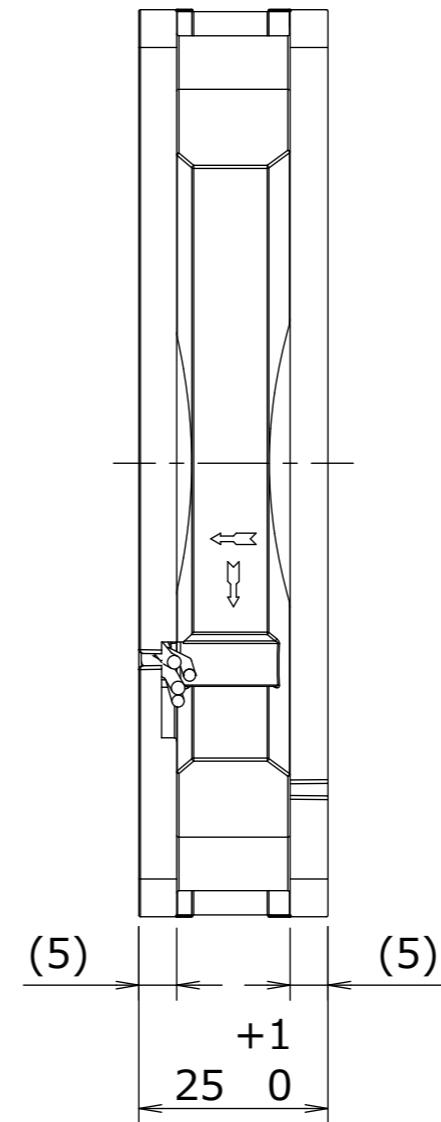
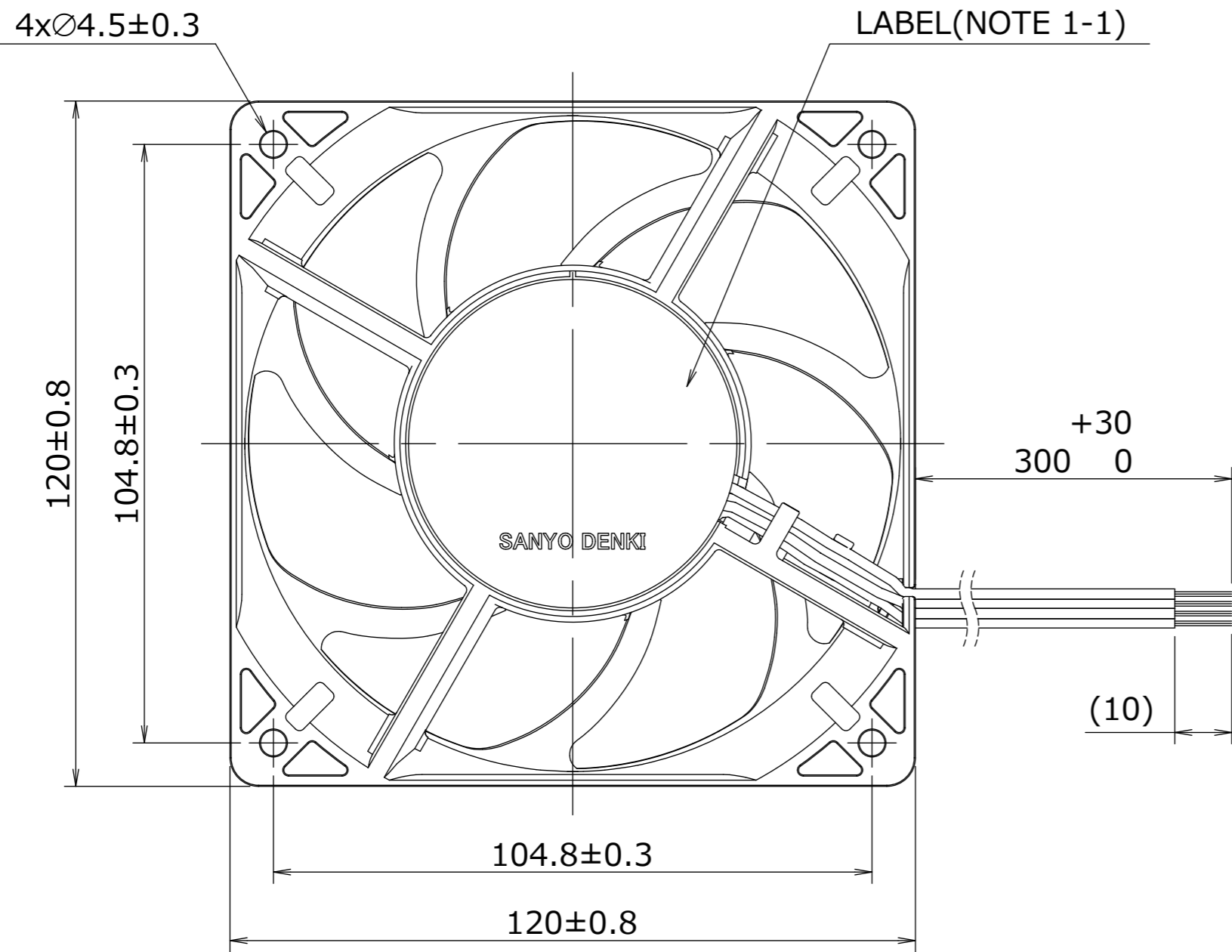


1. DIMENSIONS AND PARTS LIST

<DIMENSIONS>



ROTATING DIRECTION

AIRFLOW DIRECTION

<LEAD WIRE CONNECTION TABLE>

| POWER LEAD WIRES | | |
|------------------|---------------|--------|
| | LEAD WIRE | COLOR |
| L | UL11347 AWG22 | ORANGE |
| N | UL11347 AWG22 | GRAY |

| OTHER LEAD WIRES | | |
|------------------|--------------|--------|
| | LEAD WIRE | COLOR |
| GND | UL1430 AWG24 | BLACK |
| SENSOR | UL1430 AWG24 | YELLOW |

NOTE 1-1. THE PRODUCT NAME, MODEL NO., MANUFACTURER, MANUFACTURE DATE, ETC. ARE PRINTED ON LABEL.
銘板上に品名, 型名, 製造会社名 及び 製造年月日等を表示する。

<LABEL> SHOWS LOT No.
 はロットNo.を示す。



OR

| | | |
|--|--|--|
| ECN No. E0220719 | 名称 Title San Ace 120AD (9AD) RIBBED/LOW_SPEED_SENSOR | Rev. C |
| 単位 Unit mm | 新規 New Design K.SATOU 23-05-29 | |
| 尺度 Scale - | 図面番号 Dwg. No. 9AD1201M4H001 | |
| SANYO DENKI | | |
| 承認 Approved By N.MURAKAMI 24-02-01 | 審査 Checked By T.KAWASHIMA 24-01-31 | 設計 Designed By K.OSHIMA 24-01-18 |
| Group D12 | User E0 | Page 1/4 |

2. GENERAL SPECIFICATIONS

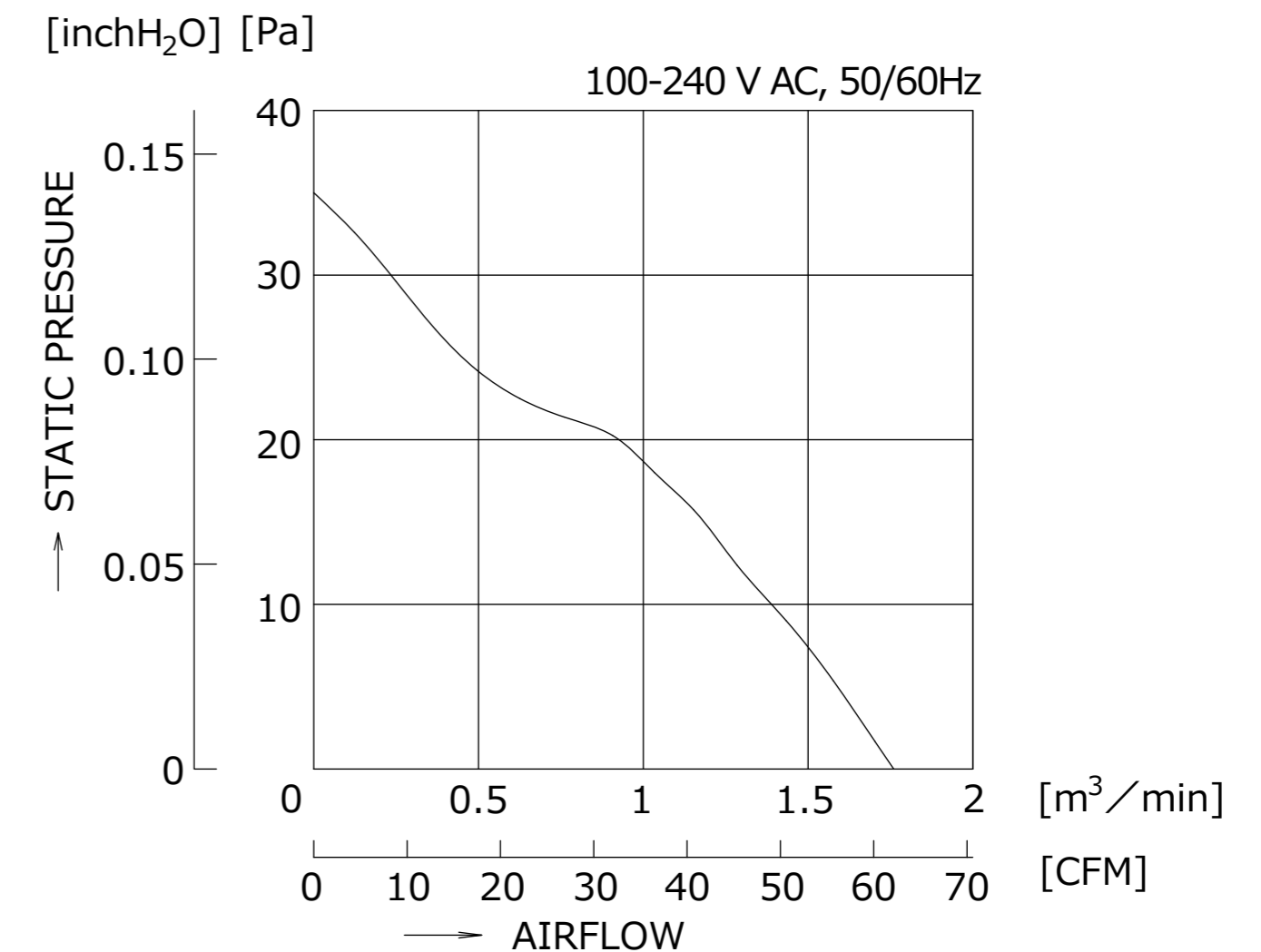
<CHARACTERISTICS>

| ITEM | UNIT | CHARACTERISTICS |
|------------------------------------|------------------------------|--|
| RATED VOLTAGE | V AC | 100 ~ 240 |
| OPERATING VOLTAGE RANGE | V AC | 90 ~ 264 |
| FREQUENCY | Hz | 50 / 60 |
| MAX. AIRFLOW | m ³ /min (CFM) | 1.76 (62) |
| MAX. STATIC PRESSURE | Pa (inchH ₂ O) | 35 (0.140) |
| RATED CURRENT (RMS) | A | 0.04 |
| RATED INPUT | W | 1.6 |
| RATED SPEED | min ⁻¹ | 2250±230 |
| INSULATION RESISTANCE | - | 10 MΩ MIN. AT 500 V DC (NOTE 2-3)(NOTE 2-4) |
| DIELECTRIC STRENGTH | - | 1 SECOND AT 2500 V AC, 50/60 Hz (NOTE 2-3) |
| | | 1 MINUTE AT 1500 V AC, 50/60 Hz (NOTE 2-4) |
| OPERATING TEMPERATURE | ℃ | -20 ~ +70 |
| STORAGE TEMPERATURE | ℃ | -30 ~ +70 |
| EXPECTED LIFE | - | 60,000 h / 60 ℃ (L10, CONTINUOUS OPERATION) |
| SOUND PRESSURE LEVEL (NOTE 2-6) | dB(A) | 34 |
| MASS | g | APPROX. 180 |
| MATERIAL | - | FRAME: PLASTICS |
| | | IMPELLER : PLASTICS |
| BEARING SYSTEM | - | 2 BALL BEARINGS |

NOTE 2-1. TAKE SAFETY MEASURES NOT TO TOUCH THIS PRODUCT (INCLUDING LEAD WIRES) WHILE THE POWER IS ON.
通電中に、本製品(リード線部を含む)に触れることのないよう、安全対策を講じてください。

2-2. VALUES FOR EACH CHARACTERISTIC ARE AT ROOM TEMPERATURE AND NORMAL HUMIDITY.
AND VALUE IS THE NOMINAL VALUE AFTER START UP AND OPERATE FOR 30 MINUTES.
諸特性は常温、常湿での値。
また、起動後、30分間動作させた後の標準値。

<REFERENCE AIRFLOW-STATIC PRESSURE CHARACTERISTICS>



2-3. BETWEEN LEAD WIRE CONDUCTORS AND FRAME.
リード線導体部とフレームとの間

2-4. BETWEEN INPUT LEAD WIRE (L, N) CONDUCTORS AND OTHER LEAD WIRE CONDUCTORS.
入力リード線 (L, N) 導体部とその他リード線導体部との間

2-5. PLEASE ENSURE APPROPRIATE INSULATION WITHIN THE FINAL PRODUCT BECAUSE OF FUNCTIONAL INSULATION BETWEEN INPUT LEAD WIRE (L, N) CONDUCTORS AND OTHER LEAD WIRE CONDUCTORS.
入力リード線 (L, N) 導体部とその他リード線導体部間は機能絶縁のため、最終製品内で適切な絶縁を確保願います。

2-6. MEASURED AT 1 m FROM THE AIR INLET.
ファン吸込側より1 mにて測定する。

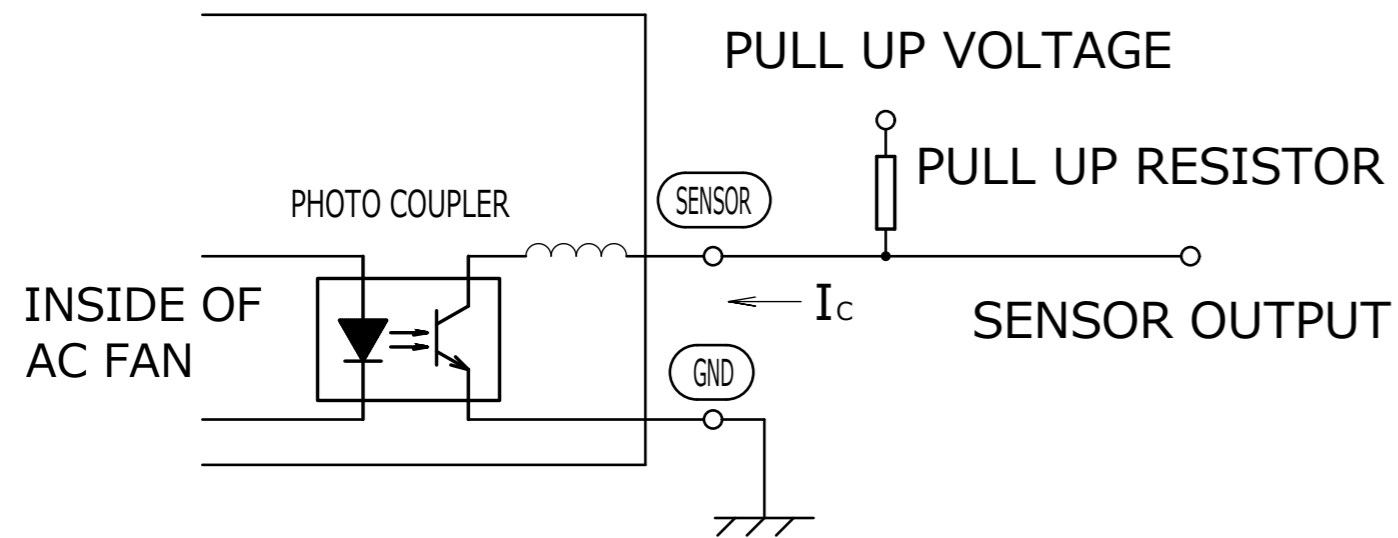
2-7. WITHIN THE OPERATING VOLTAGE RANGE, THE MOTOR IS PROTECTED FROM BURNOUT DUE TO LOCKED ROTOR.
DO NOT LOCK ROTOR OUTSIDE OF OPERATING VOLTAGE.
使用電圧範囲にてファン拘束時焼損の恐れはない。
使用電圧範囲外でファンを拘束しないこと。

| | | | | |
|----------------|---------|--------------------------------------|----------------|-------------------------|
| | ECN No. | E0220719 | 名称 Title | San Ace 120AD (9AD) |
| | 単位 Unit | 新規 New Design K.SATOU 23-05-29 | 図面番号 Dwg. No. | RIBBED/LOW_SPEED_SENSOR |
| 尺度 Scale | - | 9AD1201M4H001 | | Rev. C |
| 承認 Approved By | | 承認 Approved By | 設計 Designed By | |
| N.MURAKAMI | | T.KAWASHIMA | K.OSHIMA | |
| 24-02-01 | | 24-01-31 | 24-01-18 | |
| Group | D12 | User | E0 | Page 2/4 |

3. SENSOR SPECIFICATIONS

<OUTPUT CIRCUIT>

OPEN COLLECTOR



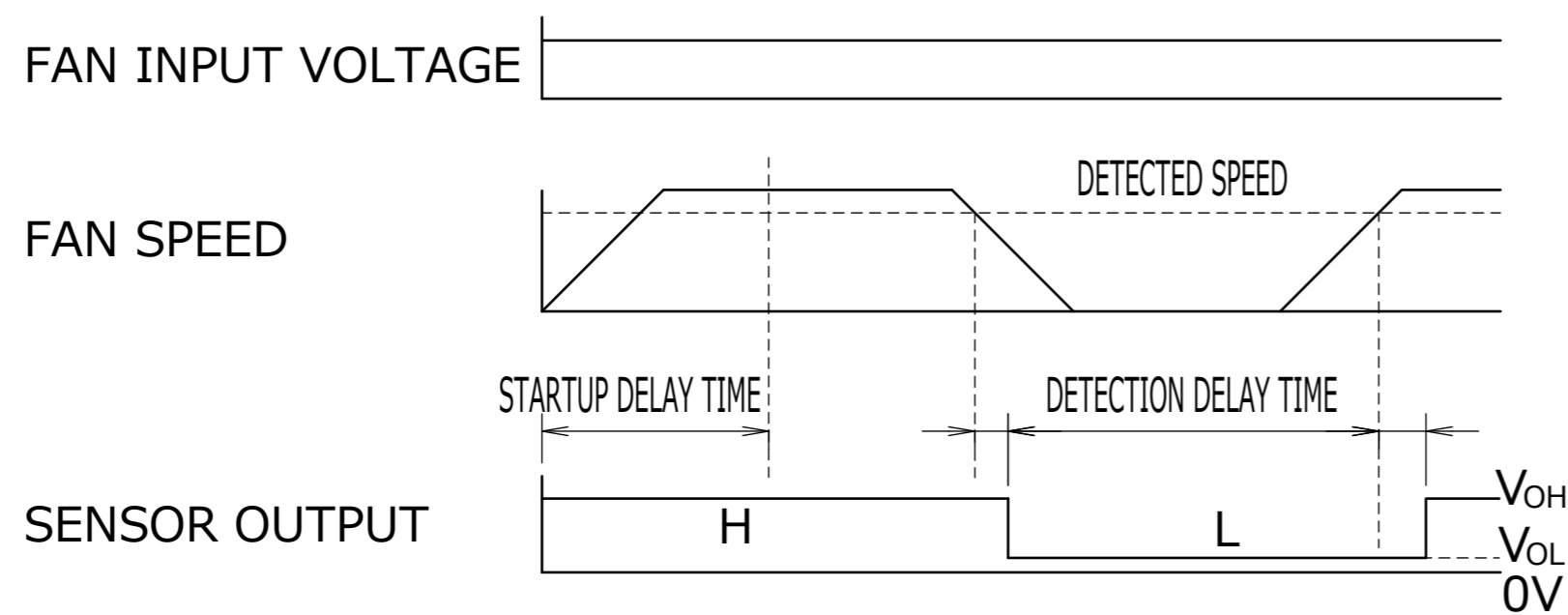
<SENSOR SPECIFICATIONS>

| ITEM | SYMBOL | UNIT | CHARACTERISTICS |
|--|----------|-------------------|--|
| SENSOR OUTPUT | - | - | L : FAN SPEED \leq DETECTED SPEED H : FAN SPEED \geq DETECTED SPEED |
| PULL UP VOLTAGE | - | V | 60 MAX. |
| COLLECTOR - EMITTER VOLTAGE (V_{CE}) | V_{OH} | V | 60 MAX. |
| COLLECTOR CURRENT | I_C | mA | 10 MAX. |
| COLLECTOR SATURATION VOLTAGE ($V_{CE(SAT)}$) | V_{OL} | V | 1.2 MAX. |
| DETECTED SPEED | - | min^{-1} | 1100 \pm 110 |
| STARTUP DELAY TIME | - | sec. | 18 \pm 3 |
| DETECTION DELAY TIME | - | sec. | 3 MAX. |

<SENSOR SEQUENCE>

Ex. 1: IN NORMAL STATUS

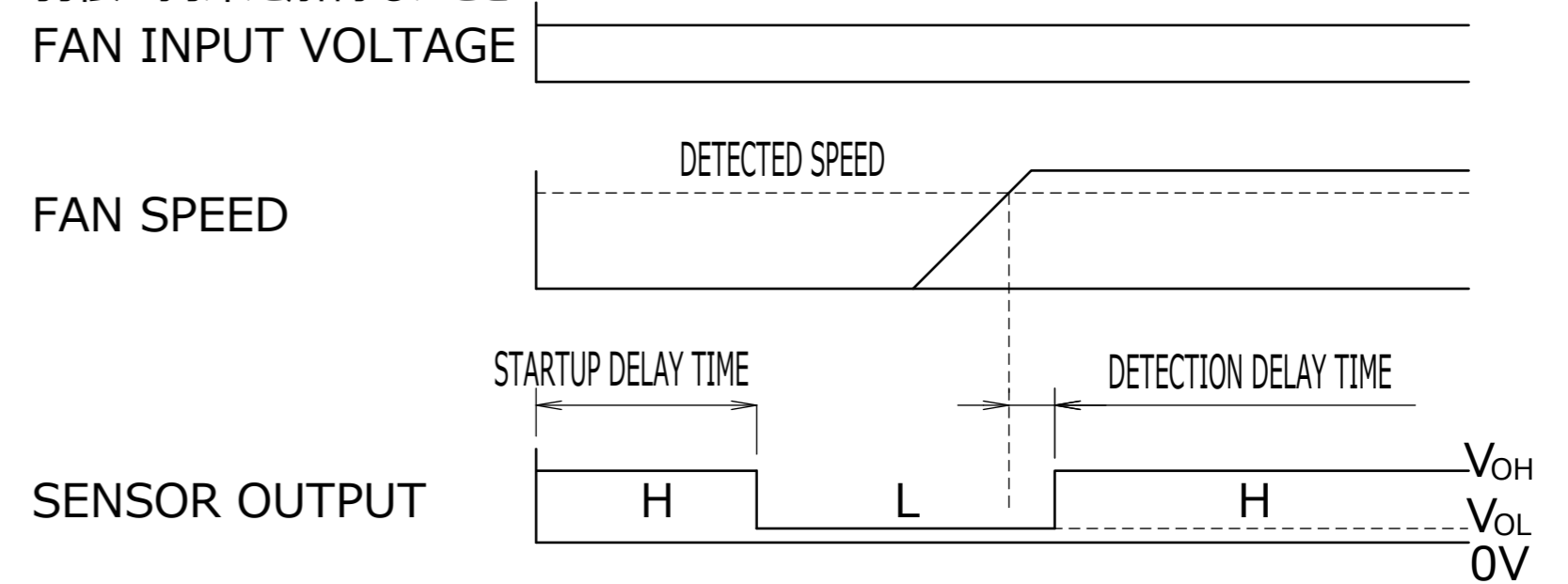
[例1] : 正常状態のとき



Ex. 2: WHEN POWER SUPPLY IS TURNED ON UNDER LOCKING ROTOR

AND THEN THE ROTOR IS RELEASED AFTER THE STARTUP DELAY TIME.

[例2] : ファン電源投入時に羽根を拘束しておき、起動遅延時間以降に羽根の拘束を解除したとき



NOTE 3-1. NOISE FROM INSIDE OF THE FAN OR EXTERNAL DEVICES MAY AFFECT SENSOR OUTPUT.

センサ出力に関しては外部およびファン内部からのノイズの影響を受ける場合がある。

3-2. ELECTRICAL NOISE MAY APPEAR ON THE V_{OH} OR V_{OL} WHEN THE FAN IS AUTO-RESTART.

モータの再起動の際には、 V_{OH} 、 V_{OL} にノイズが乗ることがある。

3-3. IF REQUIRED TO KEEP THE V_{OL} LOW, LOWER THE V_{OH} OR SET THE I_C SMALLER.

V_{OL} を低くする場合は、 V_{OH} を下げるか I_C を小さく設定すること。

| | | | | |
|----------------|----------|---------------|---------------|---------------------|
| | ECN No. | E0220719 | 名称 Title | San Ace 120AD (9AD) |
| | 単位 Unit | 新規 New Design | 設計者 Designer | K. SATOU |
| mm | 23-05-29 | 図面番号 Dwg. No. | 9AD1201M4H001 | Rev. C |
| 承認 Approved By | | N. MURAKAMI | 審査 Checked By | T. KAWASHIMA |
| Group | | D12 | User | E0 |
| 設計 Designed By | | K. OSHIMA | Page | 3/4 |

4. COMPLIANCE WITH EMC REGULATIONS

<EMC REGULATIONS> (NOTE 4-1) EMC規制

THIS PRODUCT COMPLIES WITH THE FOLLOWING EMC REGULATIONS.
本製品は以下のEMC規制に適合している。

| REGULATION | REGION / COUNTRY |
|--|------------------|
| ELECTROMAGNETIC COMPATIBILITY DIRECTIVE | EU |
| THE ELECTROMAGNETIC COMPATIBILITY REGULATIONS 2016 | UK |

<APPLIED STANDARDS> (NOTE 4-2) 適用規格

| | |
|-----|-------------|
| EMI | EN61000-6-3 |
| | EN61000-3-3 |
| EMS | EN61000-6-2 |

<EMC COMPLIANT INSTALLATION AND WIRING> EMC規制に適合させるための設置・配線

- A NOISE FILTER AND RESISTOR SHOULD BE CONNECTED TO THE AC INPUT LINE.
AC入力ラインにノイズフィルタと抵抗器を挿入すること。
- USE THE FOLLOWING RECOMMENDED NOISE FILTERS OR EQUIVALENTS.
ノイズフィルタは以下の推奨品、または相当品を使用すること。
- USE A RESISTOR WITH THE FOLLOWING RECOMMENDED RATINGS.
抵抗器は以下の推奨値の物を使用すること。

RECOMMENDED NOISE FILTERS ノイズフィルタ推奨品

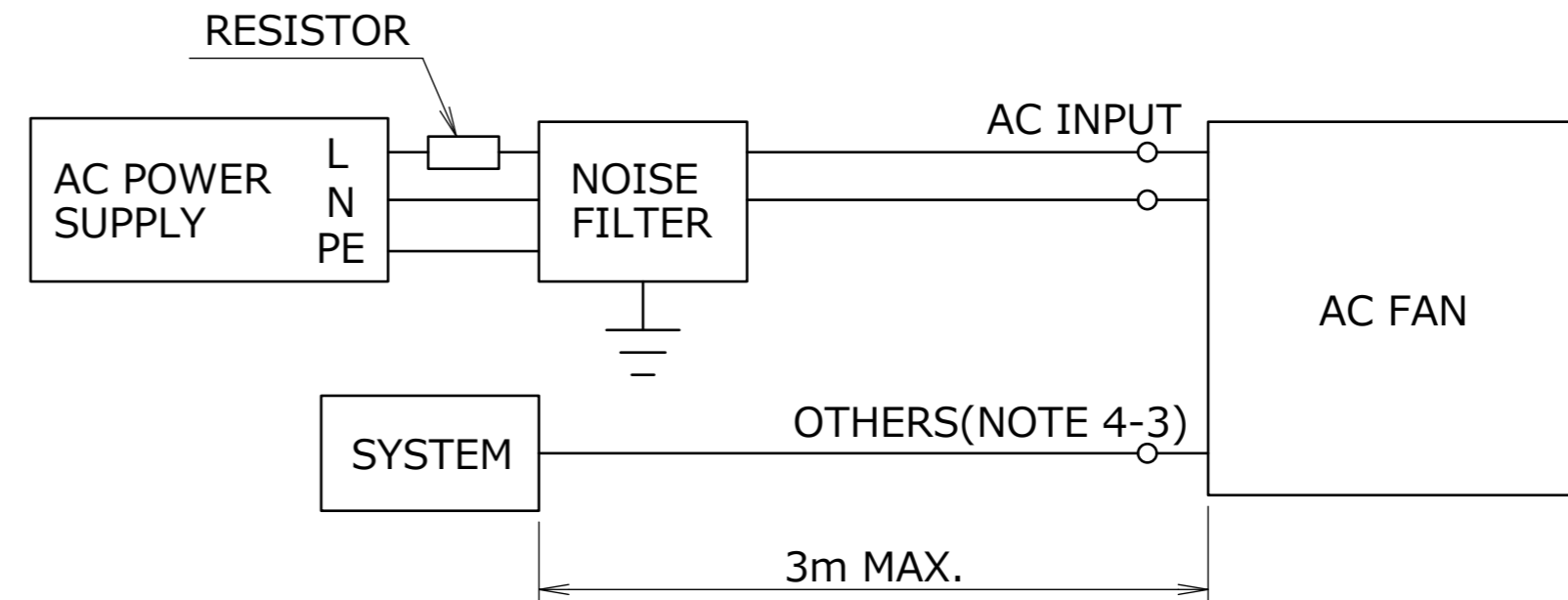
| MANUFACTURER | MODEL No. |
|-----------------|--------------|
| SCHAFFNER | FN2070-10-XX |
| COSEL | NAC-10-472 |
| SOSHIN ELECTRIC | NF2010A-SUM |

RECOMMENDED RESISTOR RATINGS 抵抗器の推奨値

| | |
|-------------|-----------------|
| RESISTANCE | 10 [Ω] |
| RATED POWER | 10 [W] |

- THE NOISE FILTER MUST BE GROUNDED.
ノイズフィルタを接地すること。
- THE WIRING LENGTH OTHER THAN AC INPUT LINE SHOULD BE 3m OR LESS.
AC入力ライン以外の配線長は3m以下にすること。

<EXAMPLE OF CONNECTION SCHEMATIC> 結線例



NOTE 4-1. THE EMC REGULATIONS REQUIRE THAT THE WHOLE SYSTEM INTO WHICH THE PRODUCT IS INSTALLED MEETS THE REQUIREMENTS. THE FINAL COMPLIANCE TEST MUST BE PERFORMED WITH THE PRODUCT INSTALLED IN THE EQUIPMENT.
EMC規制では本製品が組み込まれた装置での適合が要求されるため、装置として適合性確認試験を実施すること。

4-2. THE APPLIED STANDARDS ARE FOR INDUSTRIAL ENVIRONMENTS, AND EMC COMPLIANCE IS NOT ENSURED IN RESIDENTIAL ENVIRONMENTS.
適用規格は工業環境用であり、住居環境ではEMC規制に適合しない。

4-3. THE NUMBER OF TERMINAL DIFFERS DEPENDING ON THE MODEL.
端子数はモデルにより異なる。

| | | | | |
|----------|---------|---|-------------------------|--|
| | ECN No. | E0220719 | 名称 Title | San Ace 120AD (9AD) RIBBED/LOW_SPEED_SENSOR |
| | 単位 Unit | 新規 New Design mm K.OSHIMA 24-01-18 | 図面番号 Dwg. No. | 9AD1201M4H001 |
| 尺度 Scale | - | | | Rev. C |
| | | 承認 Approved By | 審査 Checked By | 設計 Designed By |
| | | N.MURAKAMI 24-02-01 | T.KAWASHIMA 24-01-31 | K.OSHIMA 24-01-18 |
| Group | D12 | User | E0 | Page 4/4 |