

SPECIFICATION

No. ISA1093D

Date. Oct.25, 2023

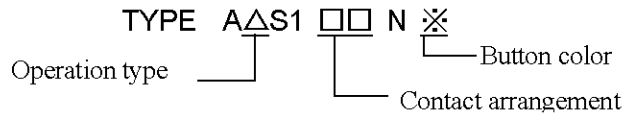
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TWS($\phi 25$) SERIES

PUSHBUTTON SWITCH



1. Applicable standard

JIS C 8201-5-1

IEC60947-5-1

EN 60947-5-1 (TUV Approval)

GB/T14048.5(CCC Certification)

UL508 (UL Listing)

CSA C22.2 No.14 (CSA Certified)

2. Operating conditions

- | | |
|-------------------------|-----------------------------|
| (1) Ambient temperature | -25 to +50°C (no freezing) |
| (2) Relative humidity | 45 to 85% (no condensation) |
| (3) Storage temperature | -40 to +80°C (no freezing) |

3. Ratings

- | | |
|-------------------------------------|------|
| (1) Rated insulation voltage | 600V |
| (2) Thermal current | 10A |
| (3) Rated voltage and rated current | |

| | | Rated operating voltage | | | | | | |
|-------------------------|---|-------------------------|-----|-----|------|------|------|----|
| | | 24V | 48V | 50V | 110V | 220V | 440V | |
| Rated operating current | A | Resistive load (AC-12) | 10A | — | 10A | 10A | 6A | 2A |
| | C | Inductive load (AC-15) | 10A | — | 7A | 5A | 3A | 1A |
| | D | Resistive load (DC-12) | 10A | 5A | — | 2.2A | 1.1A | — |
| | C | Inductive load (DC-13) | 5A | 2A | — | 1.1A | 0.6A | — |

Note) The operating current is classified according to the JIS C 8201-5-1 making and breaking current capacities.

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|---|---------------|
| (4) Minimum applicable load (reference value) | 3V AC/DC, 5mA |
|---|---------------|

4. Constructions

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|--|--|
| (1) Outside view | See attached sheet |
| (2) Degree of protection | |
| (a) Operation units (panel front side) | IP65 |
| (b) Contact block | IP20 |
| (3) Operation type — (△) | Momentary (B), Alternate (O) |
| (4) Button style | Flush |
| (5) Contact arrangement — (□□) | 1a(10), 1b(01), 1a-1b(11), 2a(20), 2b(02), 2a-2b (22), 4a (40), 4b (04), 1a-3b (13), 3a-1b (31), 3a (30), 3b (03), 1a-2b (12), 2a-1b (21) |
| (6) Button color —(※) | Black(B),Green(G),Red(R),Yellow(Y),Blue(S), White(W) |
| (7) Terminal style | M3.5 terminal screw +/- screw head |

(8) Applicable wire / Recommended tightening torque

| Applicable wire | | Maximum number of installed | Recommended tightening torque (N·m) |
|-----------------|-----------------------------------|-----------------------------|-------------------------------------|
| Solid wire | ϕ 0.5~1.6mm (AWG14~22) | 2 | 1.0~1.3 |
| | ϕ 1.7~2.0mm (AWG12) | 1 | 1.2~1.3 |
| Strand wire | 0.3~2.0mm ² (AWG14~22) | 2 | 1.0~1.3 |
| | 2.1~3.5 mm ² (AWG12) | 1 | 1.2~1.3 |

(9) Panel thickness 0.8 to 6mm

(10) Panel cut-out ϕ 25.5^{+0.5}mm

5. Characteristics

- (1) Insulation resistance 100M Ω minimum(measured with a 500V DC megger)
- (2) Dielectric strength 2,500V AC, 1minute
- (3) Contact resistance 50m Ω maximum (initial value)
- (4) Vibration resistance
- (a) Operating extremes Frequency 5 to 55Hz, Amplitude 0.5mm
- (b) Damage limits Frequency 30Hz, Amplitude 1.5mm
- (5) Shock resistance
- (a) Operating extremes 100 m/s²
- (b) Damage limits 1,000 m/s²

6. Life

- (1) Mechanical life(without load)
- (a) Momentary 5,000,000 operation minimum
- (b) Alternate 500,000 operation minimum
(3,4contacts : 250,000 operation minimum)
- (2) Electrical life (Load condition 220V AC/3A(AC-15))
- (a) Momentary 500,000 operation minimum
(Operating frequency: 1,800 operations/hour maximum Duty Rate: 40%)
- (b) Alternate 500,000 operation minimum
(3,4contacts : 250,000 operation minimum)
(Operating frequency: 900 operations/hour maximum Duty Rate: 40%)