

GENERAL SPECIFICATIONS

Electrical Capacity

Resistive Load: HS13: 6A @ 125V AC, 3A @ 250V AC, or 5A @ 30V DC
 HS16: 12A @ 125V AC or 6A @ 250V AC
 TS: 6A @ 125/250V AC
 PS: 30A @ 125/250V AC

Other Ratings

Contact Resistance: 10 milliohms maximum
Insulation Resistance: 200 megohms minimum @ 500V DC
Dielectric Strength: 1,500V AC minimum for 1 minute minimum
Mechanical Life: HS: 15,000 operations minimum
 TS: 30,000 operations minimum
 PS: 10,000 operations minimum
Electrical Life: HS: 7,500 operations minimum
 TS: 10,000 operations minimum
 PS: 5,000 operations minimum
Indexing: 30° for HS16, TS & PS; 45° for HS13
Contact Timing: Nonshorting HS13; Shorting & Nonshorting HS16; Nonshorting TS; Nonshorting PS
Range of Operating Torque: HS16: 0.54 ~ 0.64Nm for first pole & 0.05Nm for each additional pole
 HS13: 0.15 ~ 0.24Nm
 TS: 0.09Nm for first pole & (0.07Nm x total number of poles) + 0.13Nm for additional poles
 PS: 0.14Nm for each pole

Materials & Finishes

Knob: Phenolic resin
Shaft: HS13: brass; HS16, TS, & PS: brass with nickel plating
Bushing: HS13: brass; HS16, TS, & PS: brass with nickel plating
Case: Phenolic resin
Movable Contacts: HS13, HS16, & TS phosphor bronze; PS silver alloy
Stationary Contacts: HS13, HS16, & PS: brass with silver plating; TS: phosphor bronze
Terminals: HS: phosphor bronze; TS & PS: copper with silver plating

Environmental Data

Operating Temp Range: -10°C through +70°C (+14°F through +158°F)
Humidity: 90 ~ 98% humidity for 96 hours @ 40°C (104°F)
Vibration: 10 ~ 55 Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range & returning in 1 minute; 3 right angled directions for 2 hours
Shock: 50G (490m/s²) acceleration (tested in 3 right angled directions, with 3 shocks in each direction)

Installation

Mounting Torque: 2.94Nm (26 lb•in)
Maximum Panel Thickness: Shown with panel cutouts in following drawings
Soldering Time & Temperature: Manual Soldering (HS series only): See Profile A in Supplement section.

Standards & Certifications

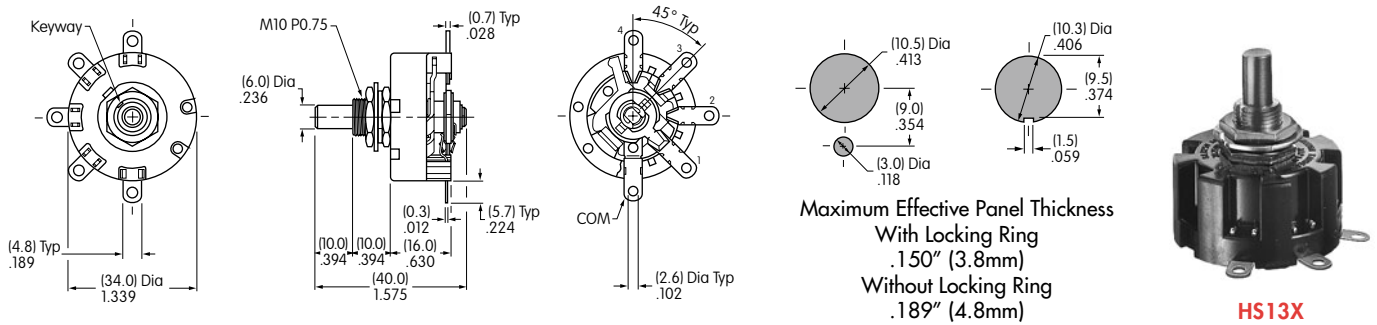
UL: **File No. E44145 - Recognized only when ordered with marking on switch.**
 Add "/U" or "/CUL" to end of part number to order UL recognized switch.
 HS16 models 1- through 6-pole are recognized at 12A @ 125V AC & 6A @ 250V AC
 See Supplement section to find UL or cULus rating details.

6 AMP SINGLE POLE/NONSHORTING/45° INDEXING

| Round Shaft | D-flat Shaft | Number of Positions | Stopper Settings | Number of Terminals * | Load Terminals | Schematics | | |
|-------------|--------------|---------------------|------------------|-----------------------|----------------|------------|-------|-------|
| | | | | | | HS13X | HS13Y | HS13Z |
| HS13X | HS13X-D | 2 | Fixed | 1 COM, 2 LOAD | 1 & 2 | | | |
| HS13Y | HS13Y-D | 3 | Fixed | 1 COM, 3 LOAD | 1, 2, & 3 | | | |
| HS13Z | HS13Z-D | 4 | Fixed | 1 COM, 4 LOAD | 1, 2, 3, & 4 | | | |

Switch is viewed from shaft end and shown in position 1. Terminal numbers are not on switch. Standard Hardware shown on last page of this section.

* Wire harness & cable assemblies offered only in Americas.

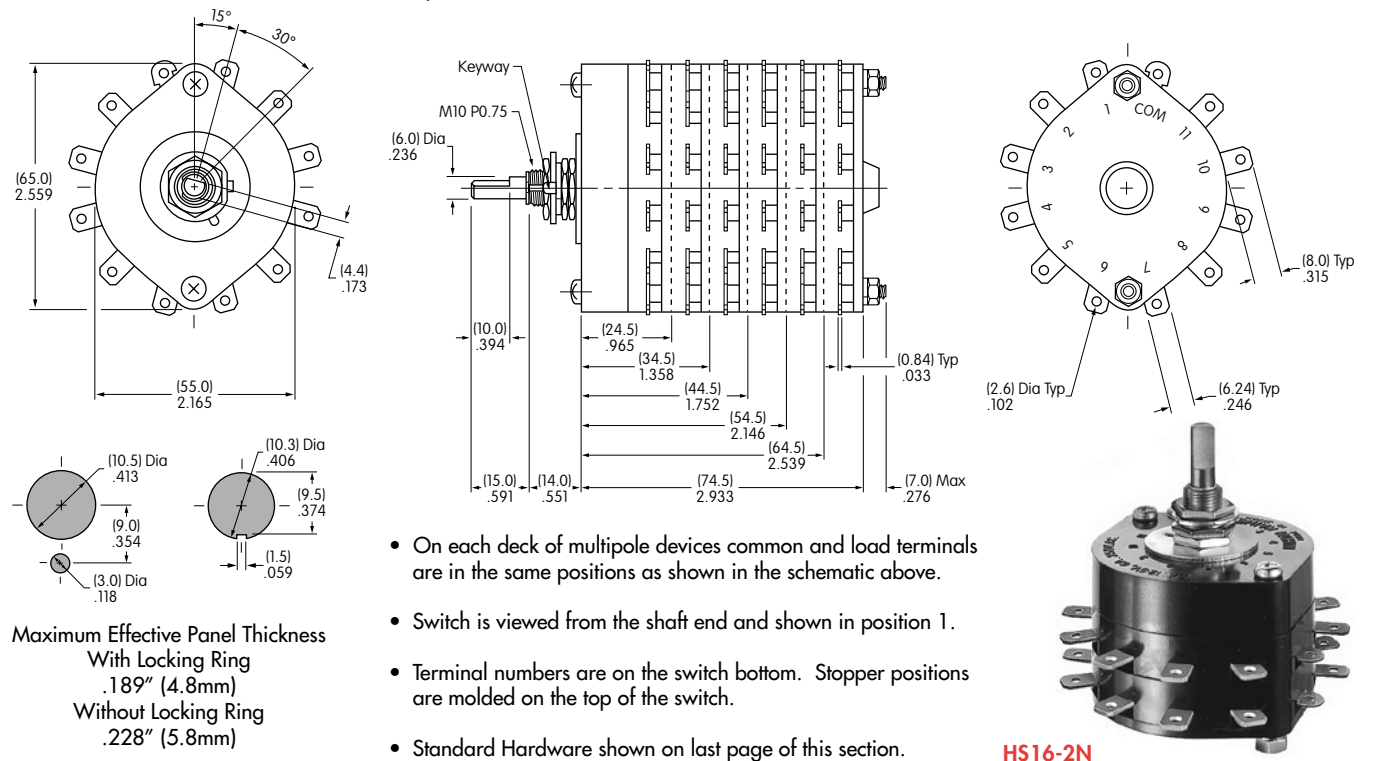


12 AMP/SHORTING & NONSHORTING/30° INDEXING

| Knurled Shaft | | D-flat Shaft | | Pole | Number of Positions | Stopper Settings | Number of Terminals * | Schematic |
|---------------|----------|--------------|----------|------|---------------------|------------------|-----------------------|-----------|
| Nonshorting | Shorting | Nonshorting | Shorting | | | | | |
| HS16-1 | HS16-1S | HS16-1N | HS16-1SN | 1P | 2-11 | 2, 3, 4 . . . 11 | 1 COM, 11 LOAD | |
| HS16-2 | HS16-2S | HS16-2N | HS16-2SN | 2P | 2-11 | 2, 3, 4 . . . 11 | 2 COM, 22 LOAD | |
| HS16-3 | HS16-3S | HS16-3N | HS16-3SN | 3P | 2-11 | 2, 3, 4 . . . 11 | 3 COM, 33 LOAD | |
| HS16-4 | HS16-4S | HS16-4N | HS16-4SN | 4P | 2-11 | 2, 3, 4 . . . 11 | 4 COM, 44 LOAD | |
| HS16-5 | HS16-5S | HS16-5N | HS16-5SN | 5P | 2-11 | 2, 3, 4 . . . 11 | 5 COM, 55 LOAD | |
| HS16-6 | HS16-6S | HS16-6N | HS16-6SN | 6P | 2-11 | 2, 3, 4 . . . 11 | 6 COM, 66 LOAD | |

Switch is viewed from shaft end and shown in position 1. Terminal numbers are not on switch. Standard Hardware shown on last page of this section.

* Wire harness & cable assemblies offered only in Americas.



Toggles
Rockers
Pushbuttons
Illuminated PB
Programmable
Keylocks
Rotaries
Slides
Tactiles
Tilt
Touch
Indicators
Accessories
Supplement

6 AMP/NONSHORTING/ADJUSTABLE STOP/30° INDEXING

| Model | Pole | Number of Positions | Stopper Settings | Number of Terminals | Shaft Type | Schematic |
|-------|------|---------------------|------------------|---------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TS1N | 1P | 2-11 | 2, 3, 4 . . . 11 | 1 COM, 11 LOAD | D Flat |  <p>On each deck of multipole devices common & load terminals are in the same positions as shown in this schematic.</p> <p>Switch is viewed from the shaft end and shown in position 1.</p> <p>Terminal numbers are on the switch bottom. Stopper positions are molded on the top of the switch.</p> |
| TS2N | 2P | 2-11 | 2, 3, 4 . . . 11 | 2 COM, 22 LOAD | D Flat | |
| TS3N | 3P | 2-11 | 2, 3, 4 . . . 11 | 3 COM, 33 LOAD | D Flat | |
| TS4N | 4P | 2-11 | 2, 3, 4 . . . 11 | 4 COM, 44 LOAD | D Flat | |
| TS5N | 5P | 2-11 | 2, 3, 4 . . . 11 | 5 COM, 55 LOAD | D Flat | |

• Standard Hardware shown on last page of this section.

Panel Cutouts



Maximum Effective Panel Thickness
 With Locking Ring .189" (4.8mm)
 Without Locking Ring .228" (5.8mm)

Top



Bottom



TS5N



Toggles

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

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Supplement

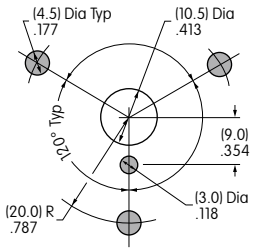
30 AMP/NONSHORTING/ADJUSTABLE STOP/30° INDEXING

| Knurled Shaft | D Flat Shaft | Pole | Number of Positions | Stopper Settings | Number of Terminals | Schematic |
|---------------|--------------|------|---------------------|------------------|---------------------|-----------|
| PS1 | PS1N | 1P | 2-11 | 2, 3, 4 . . . 11 | 1 COM, 11 LOAD | |
| PS2 | PS2N | 2P | 2-11 | 2, 3, 4 . . . 11 | 2 COM, 22 LOAD | |
| PS3 | PS3N | 3P | 2-11 | 2, 3, 4 . . . 11 | 3 COM, 33 LOAD | |
| PS4 | PS4N | 4P | 2-11 | 2, 3, 4 . . . 11 | 4 COM, 44 LOAD | |
| PS5 | PS5N | 5P | 2-11 | 2, 3, 4 . . . 11 | 5 COM, 55 LOAD | |

On each deck of multipole devices common & load terminals are in the same positions as shown in this schematic. Switch is viewed from the shaft end and shown in position 1. Terminal numbers are on switch bottom. Stopper positions are molded on the top of the switch.

- Standard Hardware shown on last page of this section.

Panel Cutout



Maximum Effective Panel Thickness Without Locking Ring
.189" (4.8mm)

Top



Bottom



PS4N

Toggles

Rockers

Pushbuttons

Programmable Illuminated PB

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

Supplement

SHAFT TYPES

D Flat Shaft

For use with
AT431 and AT432



| Dimension A | Dimension B |
|--------------------------|--------------------------|
| For TS (13.0) .512 | For TS (15.6) .614 |
| For HS (10.0) or PS .394 | For HS (15.0) or PS .591 |

Knurled Shaft

Not for use with
AT431 or AT432

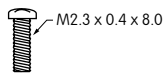
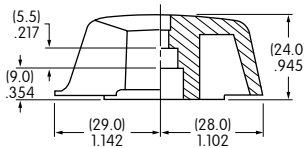
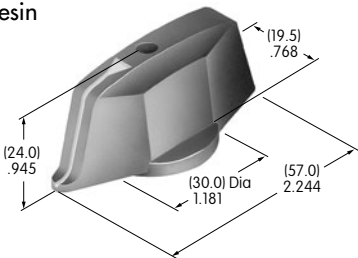


OPTIONAL KNOBS FOR D FLAT SHAFTS

AT431 Large Knob

Phenolic Resin

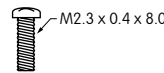
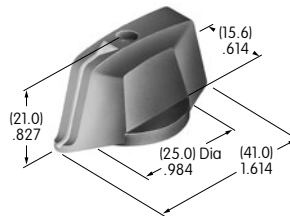
Black only
with white
indicator
line



AT432 Small Knob

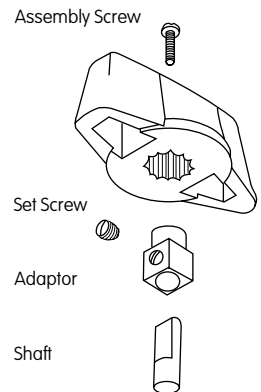
Phenolic Resin

Black only
with white
indicator
line



Knob Orientation

The rotary knobs used on the D-flat shafts can be oriented on the switch to suit the customer's particular front panel needs simply by sliding the knob over the square adaptor at the preferred orientation.



STOPPER SETTING

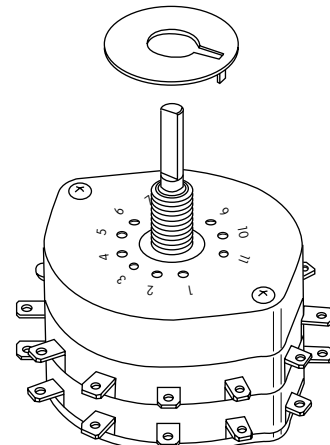
For HS16, TS, & PS Models

The HS16, TS, and PS switches are supplied with the stopper plate set for the maximum number of positions allowed for that model. Prior to installation, the desired stopper setting should be made:

1. Be sure the shaft is turned counterclockwise to the extreme left. If the shaft is not turned counterclockwise to the extreme left, proper setting cannot be achieved.
2. Loosen the nut far enough to allow raising the stopper plate for resetting.
3. Insert the stopper in the numbered hole for the desired stopper setting. Satisfactory switch functioning cannot be assured if the stopper plate is not properly positioned.
4. Tighten the nut firmly against the stopped plate.

Standard Hardware Supplied with HS, TS, and PS:

- AT526 Hex Mounting Nut (quantity 3)
- AT518 Locking Ring (quantity 1)
- AT520 Split Lockwasher (quantity 1)
- Use of mounting supports on PS is optional; screws are not provided.



Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А