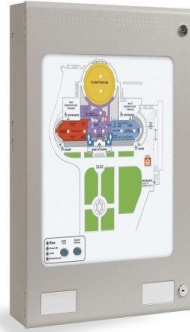


ADDRESSABLE CONTROL UNIT FIRE SMOKE CONTROL PANEL



SA-P20R0 / SA-P4LR0



SMOKE CONTROL STATION

PRODUCT OVERVIEW

The addressable unit supports 2 or 4 SLC loops for a total of 500 primary points or 800 points using subpoints. SLC loop communications uses standard twisted pair cabling, shielded cable is not necessary.

The panel may be configured with various communication cards; Communications options support central station monitoring, virtual panel, and networking.

The panel can be configured as a stand alone panel with just a few devices for a small building, it can also operate as the building system and can be part of a network with a total of 64 nodes serving a multiple building campus or a very large facility.

Auto Learn capability provides a convenient method to troubleshoot new installations before final programming is loaded.

FEATURES.

- Multi-Loop 2 Analog Addressable Loops Field upgradable to 4.
- 126 primary points per loop.
- Powerful, network wide cause and effects (500 total) .
- Fully user programmable by point or zone.
- 800 points per panel when using devices with sub-points.
- Up to 3048 m wiring length on SLC loop.
- 64 Panels on a network.
- Programmable through a PC connection to the panel, or through keypad.

- Programmable relays – 5.
- Supervised Powered Outputs – 3.
- 4 Programmable notification appliance circuits.
- Power per NAC: 1.6 A maximum.
- Programmable outputs on SLC loop.
- Programmable Function button on front display.
- Fire Drill button on front display.
- Day and night sensitivity settings (user programmable).
- Power Supply: 5.25 A regulated & integrated.
- LCD Display: 8x40.
- Zonal Mode: Annunciation by zone w/o individual relationships.
- Panel Ring Modes: Common, Zonal, and Stage 2.
- NAC Outputs programmable.
- Continuous, March, Temporal.
- Program cause and effects AND, OR, or any two (Cross Zone)
- One-man walk test – Fire Test Mode.
- Available in Red.

ADDED FEATURES

ENET OPTION

- Network uses standard RS485 cabling.
- Up to 1.2 km between adjacent panels.
- 115 Kbps constant network speed.
- Secure, fault tolerant communication.
- Up to 64 nodes.

DACT OPTION

- Dual line digital communicator & modem.
- Contact ID and SIA reporting.
- Zone or point reporting.
- Backup and duplicate reporting.

TECHNICAL DATA

Primary AC	230 V AC @ 2 A, 50 or 60 hz
Output DC	24 V DC @ 4 A
Power Supply	5.25 A regulated and integrated
Charger Current	1.25 A max
Weight (without battery)	11.4 kg
Color	Red (optional gray)
Display	8 line x 40 character LCD (320 characters total)
Zones	500 Zones per network
SLC loops	2 or 4 (class A or B)
Devices per loop	126 sensors & modules (800 addresses + subaddresses max. per panel)
NAC Outputs	(4) 1.6 A @ 24 V DC (class B)
Relay Outputs	(5) Form C 1 A @ 30 V DC
IP Rating	30
Voltage Outputs	(3) 500 mA @ 24 V DC, reverse polarity supervised
Aux. Power	500 mA @ 24V DC
Aux. Inputs	(3) digital pull downs
Current Consumption	
SA-P20R0/ SA-P20R3	355 mA Standby 650 mA Alarm
SA-P4LR0/ SA-P4LR3	455 mA Standby 765 mA Alarm
Available Models	
SA-P20R0	Two Loop Panel
SA-P4LR0	Four Loop Panel
SA-P20R3	Two Loop Panel

SWITCH MONITOR INPUT OUTPUT MODULE

FIRE SMOKE CONTROL PANEL

**S-A4042**

DESCRIPTION

Dual Priority Switch Monitor Module contains two priority switch monitor modules on a single plate.

INSTALLATION

This product must be installed in accordance with the applicable NFPA standards, local codes and jurisdictional authorities. Failure to follow these instructions may result in failure of devices to report an alarm condition. Shield Fire, Safety and Security Ltd is not responsible for devices which are improperly installed, maintained and tested.

Before installing this product, check the continuity, polarity and insulation resistance of all wiring. Check that sitting is in accordance with the fire system drawings and conforms to all applicable local codes such as NFPA 72/92.

Mount the electrical box as required and install all cables for termination. Ensure that cable shield/earth continuity is maintained.

Drill holes in the fascia plate corresponding to the holes on the mounting box selected (Fig 2).

Terminate all cables in compliance with local codes and regulations.

Set the address of the unit as shown on page (Fig 1).

Gently push the completed assembly towards the mounting box and align the fixing holes. Secure the unit with screws provided. Do not over tighten the screws.

Commission the module.

FEATURES

- Three input states - 'normal', 'trouble',
- Loop-powered.
- Visible LED's.
- Fast response time.
- Interrupt facility.

TECHNICAL DATA

Working Voltage	17 - 28 V DC
Modulating Voltage	5-9 V (peak to peak)
Current Consumption at 24V	
Supervisory Standby Current	1.5 mA
Surge current	2.5 mA
Max Alarm Current	5.0 mA (LED On)
Line Impedance	100Ω max
Temperature Range	0°C to 49°C
Humidity	10-93 % RH (Non-Condensing)

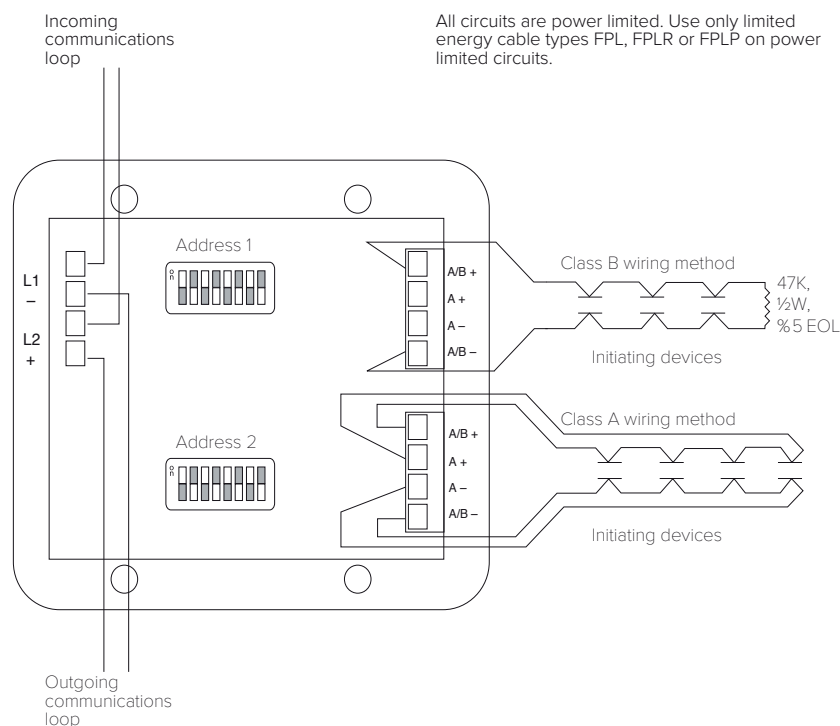
FUNCTIONAL TEST DATA

Output Bit	Function	Input Bit	Function
2	Alarm LED 1 = On 0 = Off	2	Alarm LED Confirmation 1 = On 0 = O
1	Remote Test 1 = Test Enabled 0 = Normal	1	Indicates Class Wiring 1 = Class B* 0 = Class A
0	Not Used	1	Alarm Status 1 = Alarm 0 = Normal

Fig. 1 - DIL Switch



Fig. 2 - Wiring diagram for Dual Priority Switch Monitor Module



SWITCH MONITOR INPUT OUTPUT MODULE

FIRE SMOKE CONTROL PANEL

**S-A4045**

DESCRIPTION

Switch Monitor Input/output Module provides a voltage free, single pole, change-over relay output, a single, monitored switch input and unmonitored, non-polarized opto-coupled input.

INSTALLATION

These products must be installed in accordance with the applicable NFPA standards, local codes and jurisdictional authorities. Failure to follow these instructions may result in failure of devices to report an alarm condition. Shield Fire, Safety and Security Ltd is not responsible for devices which are improperly installed, maintained and tested.

Before installing these products, check the continuity, polarity and insulation resistance of all wiring. Check that siting is in accordance with the fire system drawings and conforms to all applicable local codes such as NFPA 72/92.

Mount the electrical box as required and install all cables for termination. Where applicable ensure that cable shield/earth continuity is maintained.

Drill holes in the fascia plate corresponding to the holes on the mounting box selected.

Terminate all cables in compliance with local codes and regulations. Set the address of the module.

Gently push the completed assembly towards the mounting box and align the fixing holes. Secure the unit with the screws provided. Do not over tighten the screws.

Commission the module.

FEATURES

- Report 'trouble', 'switch open' and 'switch closed' levels.
- Visible LED.
- Loop-powered.

TECHNICAL DATA

Working Voltage	17 - 28 V DC
Operating Current	5-9 V (peak to peak)
Supervisory Standby Current	850 μ A
Surge current	7.5 mA
Maximum Alarm Current	6.0 mA (LED On)
Temperature Range	0°C to 49°C
Humidity	0-93 % RH non-condensing
End-of-Line Resistors	47 K Ω
Relay Output	Non supervised, programmable, dry contact 24 V DC, 1A:30 V AC 0.5 A (resistive)

FUNCTIONAL TEST DATA

Output Bit	Function	Input Bit	Function
2	Alarm LED 1 = On 0 = Off	2	Alarm LED Confirmation 1 = On 0 = Off
1	Not used	1	Indicates Class Wiring 1 = Class B* 0 = Class A
0	Sounder Control 1 = On 0 = Off	0	Opto-isolated Input Status 1 = Input low 0 = Input high

* Note: Toggles to '0' in alarm.

NOTE:

All circuits are power limited except for relay contacts. If the relay contacts are connected to a non-power limited source, remove the lower portion of the power limited label along the kiss cut. Use only limited energy cable types FPL, FPLR or FPLP on power limited circuits. remove the power.

Fig. 1 - Wiring Diagram for Switch Monitor Input/Output Module

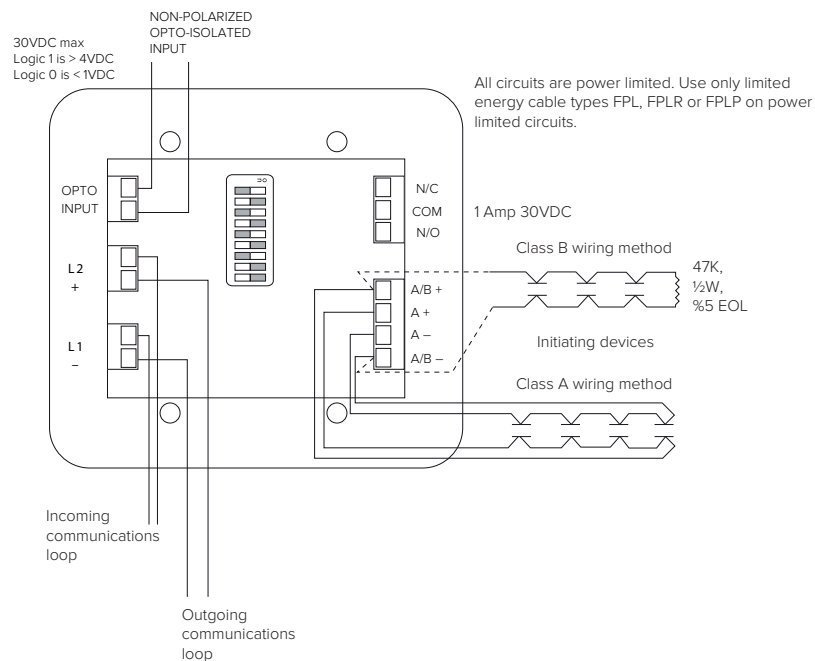
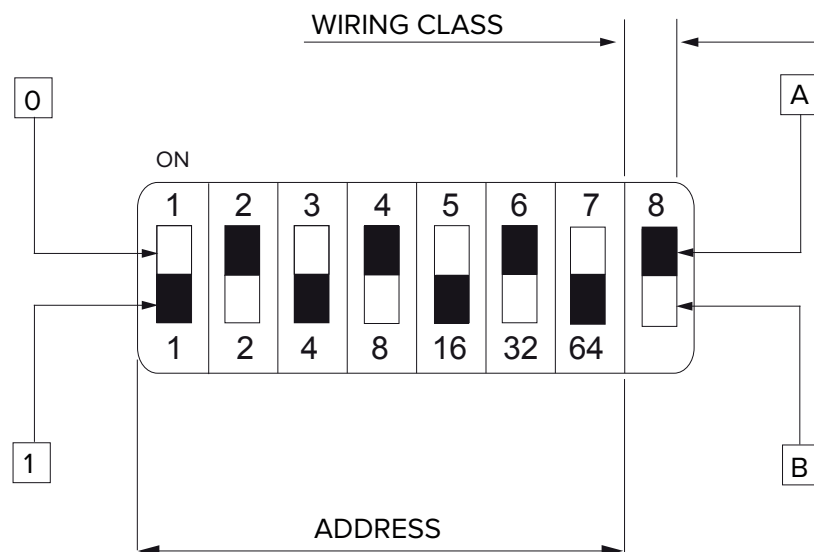
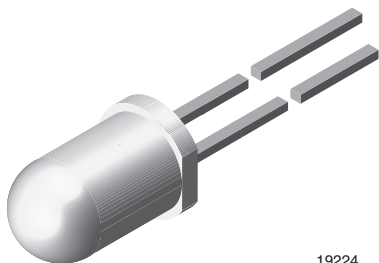


Fig. 2 - DIP Switch



Universal LED in Ø 5 mm Tinted Diffused Package



19224

FEATURES

- For DC and pulse operation
- Luminous intensity categorized
- Standard T-1 1/4 package
- TLUR640. without stand-offs
- Material categorization:
For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: 5 mm
- Product series: standard
- Angle of half intensity: $\pm 30^\circ$

APPLICATIONS

- General indicating and lighting purposes

PARTS TABLE

PART	COLOR	LUMINOUS INTENSITY (mcd)			at I_F (mA)	WAVELENGTH (nm)			at I_F (mA)	FORWARD VOLTAGE (V)			at I_F (mA)	TECHNOLOGY
		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		
TLUR6400	Red	4	15	-	10	-	630	-	10	-	2	3	20	GaAsP on GaAs
TLUR6401	Red	4	15	32	10	-	630	-	10	-	2	3	20	GaAsP on GaAs

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^\circ\text{C}$, unless otherwise specified)

TLUR6401

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V_R	6	V
DC forward current		I_F	20	mA
Surge forward current	$t_p \leq 10 \mu\text{s}$	I_{FSM}	1	A
Power dissipation	$T_{amb} \leq 65^\circ\text{C}$	P_V	60	mW
Junction temperature		T_j	100	$^\circ\text{C}$
Operating temperature range		T_{amb}	- 40 to + 100	$^\circ\text{C}$
Storage temperature range		T_{stg}	- 55 to + 100	$^\circ\text{C}$
Soldering temperature	$t \leq 5 \text{ s}$, 2 mm from body	T_{sd}	260	$^\circ\text{C}$
Thermal resistance junction/ambient		R_{thJA}	500	K/W

OPTICAL AND ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^\circ\text{C}$, unless otherwise specified)

TLUR640., RED

PARAMETER	TEST CONDITION	PART	MIN.	TYP.	MAX.	UNIT	MIN.
Luminous intensity ⁽¹⁾	$I_F = 10 \text{ mA}$	TLUR6400	I_V	4	15	-	mcd
		TLUR6401	I_V	4	15	32	mcd
Dominant wavelength	$I_F = 10 \text{ mA}$		λ_d	-	630	-	nm
Peak wavelength	$I_F = 10 \text{ mA}$		λ_p	-	640	-	nm
Angle of half intensity	$I_F = 10 \text{ mA}$		ϕ	-	± 30	-	deg
Forward voltage	$I_F = 20 \text{ mA}$		V_F	-	2	3	V
Reverse voltage	$I_R = 10 \mu\text{A}$		V_R	6	15	-	V
Junction capacitance	$V_R = 0 \text{ V}$, $f = 1 \text{ MHz}$		C_j	-	50	-	pF

Note

⁽¹⁾ In one packing unit $I_{Vmin.}/I_{Vmax.} \leq 0.5$

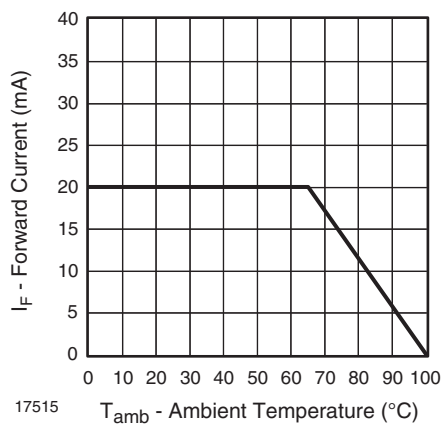
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Forward Current vs. Ambient Temperature

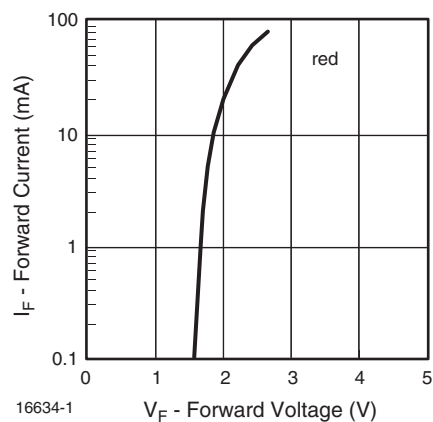


Fig. 4 - Forward Current vs. Forward Voltage

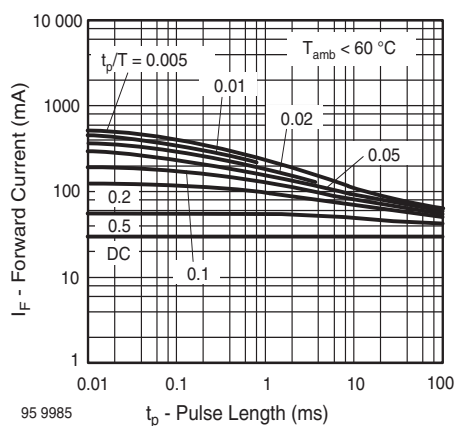


Fig. 2 - Pulse Forward Current vs. Pulse Duration

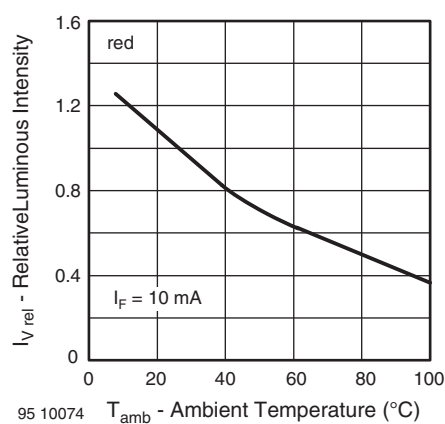


Fig. 5 - Relative Luminous Intensity vs. Ambient Temperature

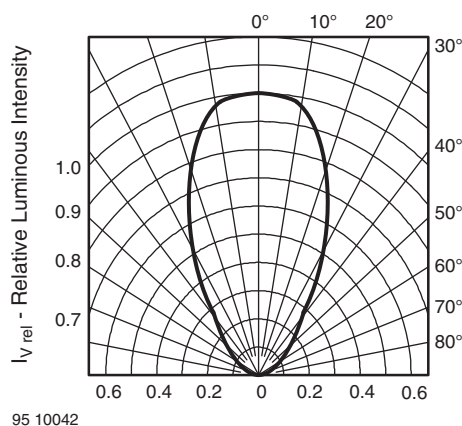


Fig. 3 - Relative Luminous Intensity vs. Angular Displacement

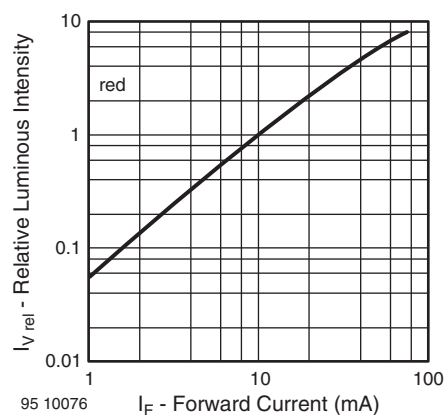


Fig. 6 - Relative Luminous Intensity vs. Forward Current

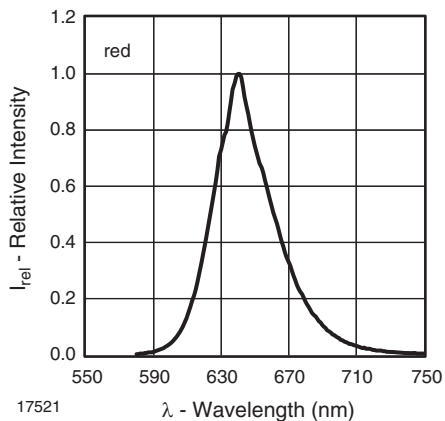
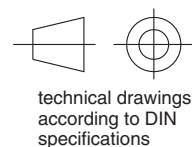
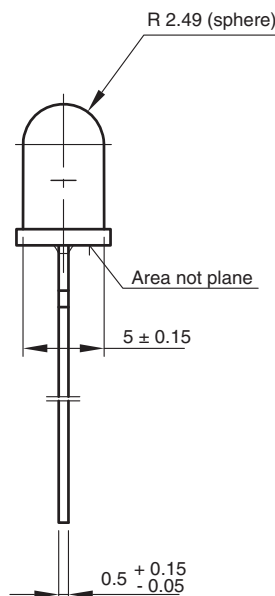
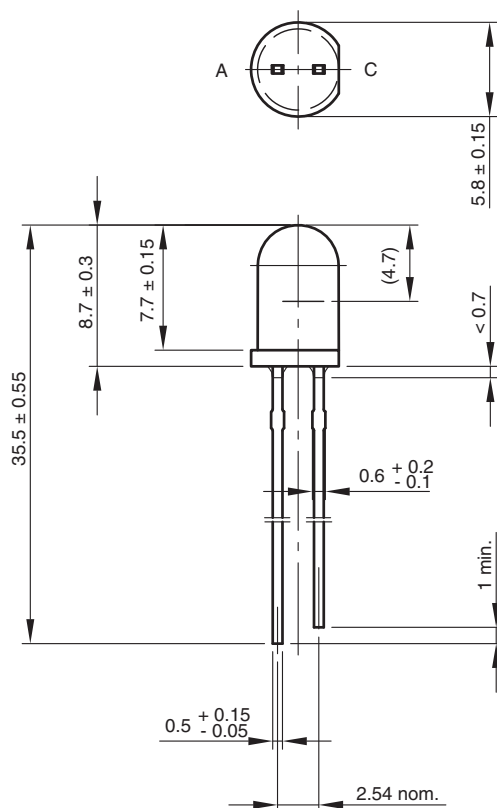


Fig. 7 - Relative Intensity vs. Wavelength

PACKAGE DIMENSIONS in millimeters


6.544-5259.02-4
Issue: 8; 19.05.09
95 10917



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.



WXB2-BD33



WXB2-BJ21



WXB2-BJ33



WXB2-BG21



WXB2-BK2465

Circular head, with chromium plated metal bezel

Complete units with screw and captive cable clamp connections

Selector switches

Description	Contract/Type	Scheme	Operator	Reference
2 Position stay put	N/C		Standard handle	WXB2-BD21
			Long handle	WXB2-BJ21
	N/C+N/O		Standard handle	WXB2-BD25
			Long handle	WXB2-BJ25
2 Position 1 spring return from right to left	N/O		Standard handle	WXB2-BD41
			Long handle	WXB2-BJ41
	N/C+N/O		Standard handle	WXB2-BD45
			Long handle	WXB2-BJ45
3 Position stay put	N/O+N/O		Standard handle	WXB2-BD33
			Long handle	WXB2-BJ33
3 Position 2 spring return to centre	N/O+N/O		Standard handle	WXB2-BD53
			Long handle	WXB2-BJ53

■ Key switches(key n°455)

Description	Contract/Type	Scheme	Key removal	Reference
2 Position stay put	N/O		LH position	WXB2-BG21
			LH and RH position	WXB2-BG41
	N/C+N/O		LH position	WXB2-BG25
			LH and RH position	WXB2-BG45
2 Position 1 spring return from right to left	N/O		LH position	WXB2-BG61
			LH position	WXB2-BG65
	N/C+N/O		LH position	WXB2-BG65
			LH position	WXB2-BG65
			Centre position	
			LH and RH position	WXB2-BG53
			3 LH position	WXB2-BG03

■ Selector switches with pilot light

Description	Contact/ type	Scheme	Reference
2 Position stay put	N/C+N/O		WXB2-BK2365
			WXB2-BK2465
			WXB2-BK2565
			WXB2-BK2665
			WXB2-BK2765
	N/C+N/O		WXB2-BK3365
			WXB2-BK3465
			WXB2-BK3565
			WXB2-BK3665
			WXB2-BK3765
	N/C+N/O		WXB2-BK5365
			WXB2-BK5465
			WXB2-BK5565
			WXB2-BK5665
			WXB2-BK5765

MICRO SWITCH™ General Purpose Toggle Switches

TS Series

005427-3-EN

Issue 3

Datasheet



DESCRIPTION

MICRO SWITCH™ TS Series toggles may be used anywhere manual operation is desired. They are an entry-level solution for applications that do not require a sealed toggle switch. Special on-on-on circuitry can also be furnished. MICRO SWITCH™ TS Series switches feature broad circuitry and action availability considering 2- or 3-position options, momentary and maintained actions, and 1- and 2-pole circuitry. Switches are available with solder, screw, or quick-connect termination styles.

VALUE TO CUSTOMERS

- Low-cost toggle solution for applications without harsh environmental conditions or where third-party seal rating is not required
- Minimizes service costs while extending equipment life

FEATURES

- UL recognized, CSA certified, and CE certified
- 1- and 2-pole options
- 2- or 3-position; maintained and momentary action
- Electrical connections: screw, solder, quick connect (spade)
- Optional step-case design provides added space between terminals to prevent shorting

POTENTIAL APPLICATIONS

- Agricultural equipment
- Construction equipment
- Controllers
- Factory floor machinery

PORTFOLIO

The [TS Series](#) is part of the MICRO SWITCH™ family of toggle switches that include the [TL](#), [NT](#), [TW](#), [AT](#), and [ET](#) Series switches.

MICRO SWITCH™ General-Purpose Toggle Switches, TS Series

Table 1. Specifications



Characteristic	Parameter
Description	general-purpose toggle switch
Sealing	unsealed
Operating temperature	-54 °C to 71 °C [-65 °F to 160 °F]
Actuators	standard, lever
Action	2- or 3- position; momentary and maintained
Mounting	bushing 15/32 in (0.47 in) Ø
Circuitry	SPDT, DPDT
Terminations	screw, solder, quick connect
Contacts	Silver tin oxide and indium oxide
Electrical rating (resistive load)	0.4 A to 10 A @ 126 Vac to 277 Vac 0.4 A to 20 A @ 0.5 Vac to 125 Vac
Approvals	UL, CSA, CE
Measurement	55,83 mm H x 28,58 mm W x 16,51 mm D [2.198 in H x 1.125 in W x 0.65 in D]

Table 2. UL and CSA Electrical Ratings

Rating Code	Electrical Rating
L311	10 A, 277 Vac; 20 A, 125 Vac; ¾ HP, 125 Vac / 250 Vac
L312	10 A, 277 Vac; 20 A, 125 Vac; 1½ HP, 125 Vac / 250 Vac



MICRO SWITCH™ General-Purpose Toggle Switches, TS Series

Table 3. MICRO SWITCH™ TS Series 2-Position Order Guide

No. of poles	Circuits Made with Toggle at:			Catalog Listing		
	Keyway Position	Opposite Keyway	UL Rating Code	Screw Terminals	Solder Terminals	Quick-Connect Terminals
	OFF	2-3 ON	L311	11TS15-2	11TS115-2	11TS95-2
	2-1 ON	2-3 ON	L311	11TS15-3	11TS115-3	11TS95-3
	OFF*	2-3 ON	L312	11TS15-4	11TS115-4	11TS95-4
	2-1 ON*	OFF	L312	11TS15-6	11TS115-6	11TS95-6
	2-1 ON*	2-3 ON	L312	11TS15-8	11TS115-8	–
	OFF	2-3 & 5-6 ON	L311	12TS15-2	12TS115-2	12TS95-2
	2-1 ON & 5-4 ON	2-3 & 5-6 ON	L311	12TS15-3	12TS115-3	12TS95-3
	OFF*	2-3 & 5-6 ON	L312	12TS15-4	–	–
	2-1 ON & 5-4 ON*	OFF	L312	12TS15-6	–	–
	2-1 ON & 5-4 ON*	2-3 & 5-6 ON	L312	12TS15-8	12TS115-8	–

* Marked toggle positions are momentary. All others are maintained.

Table 4. MICRO SWITCH™ TS Series 3-Position Order Guide

No. of poles	Circuits Made with Toggle at:			UL Rating Code	Catalog Listing		
	Keyway Position	Center Position	Opposite Keyway		Screw Terminals	Solder Terminals	Quick-Connect Terminals
	2-1 ON	OFF	2-3 ON	L311	11TS15-1	11TS115-1	11TS95-1
	2-1 ON*	OFF	2-3 ON	L312	11TS15-5	11TS115-5	11TS95-5
	2-1 ON*	OFF	2-3 ON*	L312	11TS15-7	11TS115-7	11TS95-7
	2-1 & 5-4 ON	OFF	2-3 & 5-6 ON	L311	12TS15-1	12TS115-1	12TS95-1
	2-1 & 5-4 ON*	OFF	2-3 & 5-6 ON	L312	12TS15-5	12TS115-5	12TS95-5
	2-1 & 5-4 ON*	OFF	2-3 & 5-6 ON*	L312	12TS15-7	–	12TS95-7
	2-1 & 5-4 ON	2-1 & 5-6 ON	2-3 & 5-6 ON	L312	–	–	12TS95-10

* Marked toggle positions are momentary. All others are maintained.

MICRO SWITCH™ General-Purpose Toggle Switches, TS Series

TS SERIES STANDARD ACTUATOR OPTIONS, TERMINALS, & DIMENSIONS

Note: Two and three-position switches shown.

Figure 1. Single pole, standard lever, screw terminals

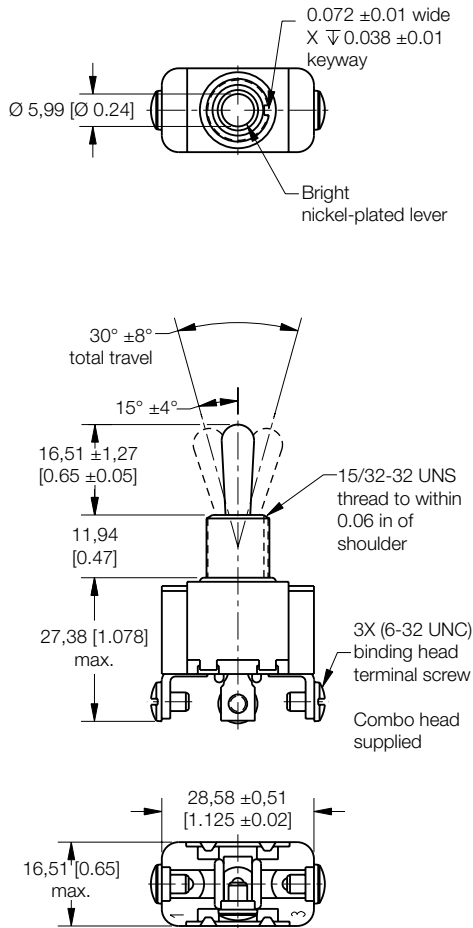


Figure 2. Single pole, standard lever, quick-connect terminals

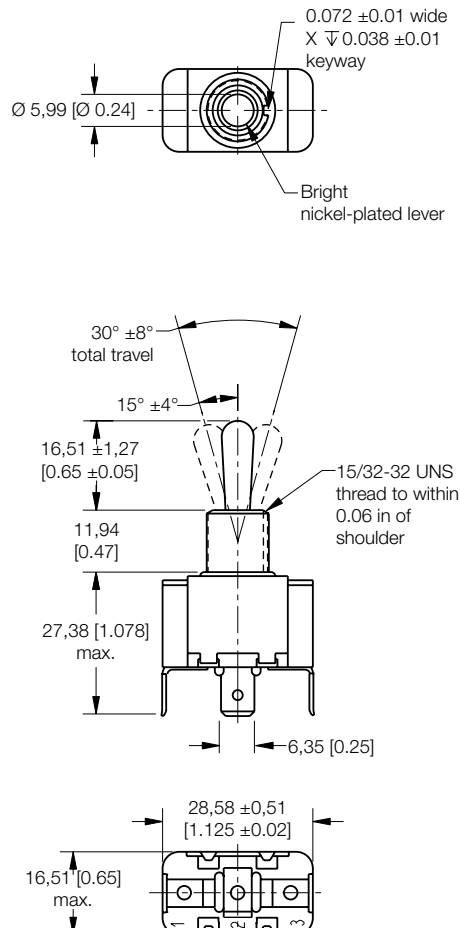
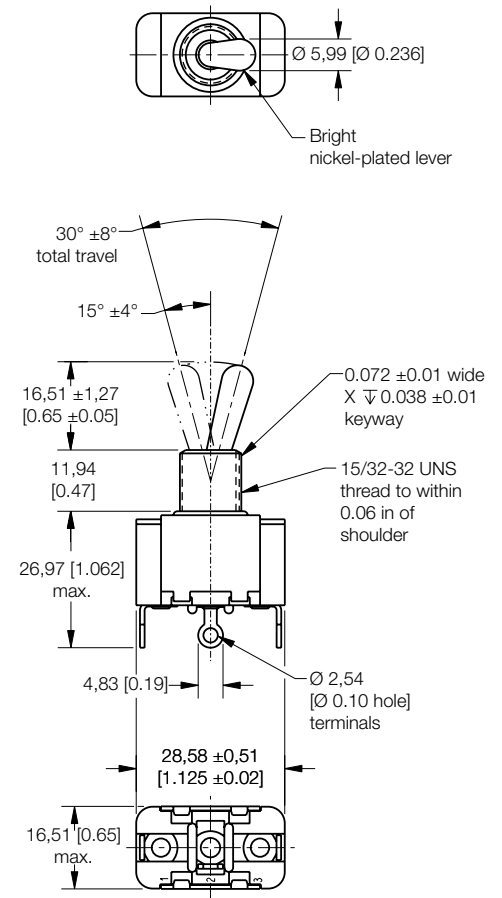


Figure 3. Single pole, standard lever, solder terminals



MICRO SWITCH™ General-Purpose Toggle Switches, TS Series

TS SERIES STANDARD ACTUATOR OPTIONS, TERMINALS, & DIMENSIONS

Note: Two and three-position switches shown.

Figure 4. Double pole, standard lever, screw terminals

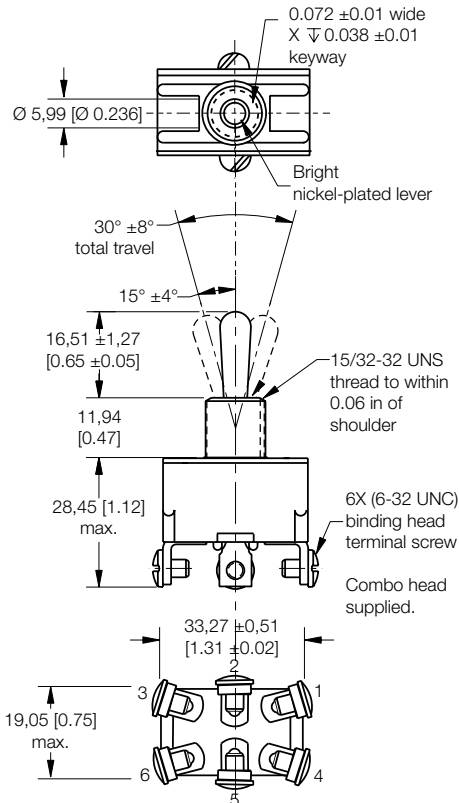


Figure 5. Double pole, standard lever, quick-connect terminals

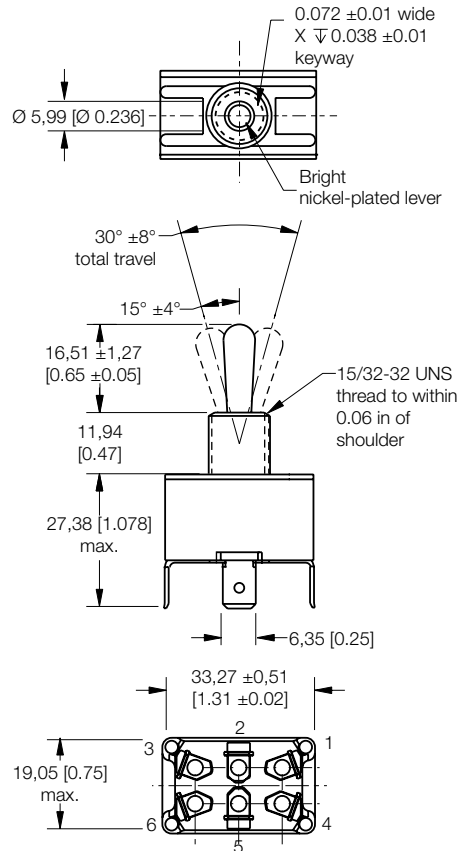


Figure 6. Double pole, standard lever, solder terminals

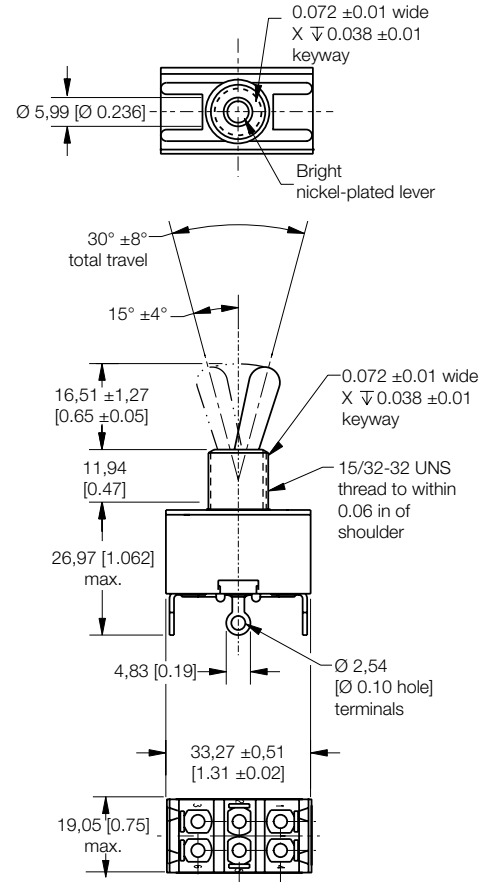
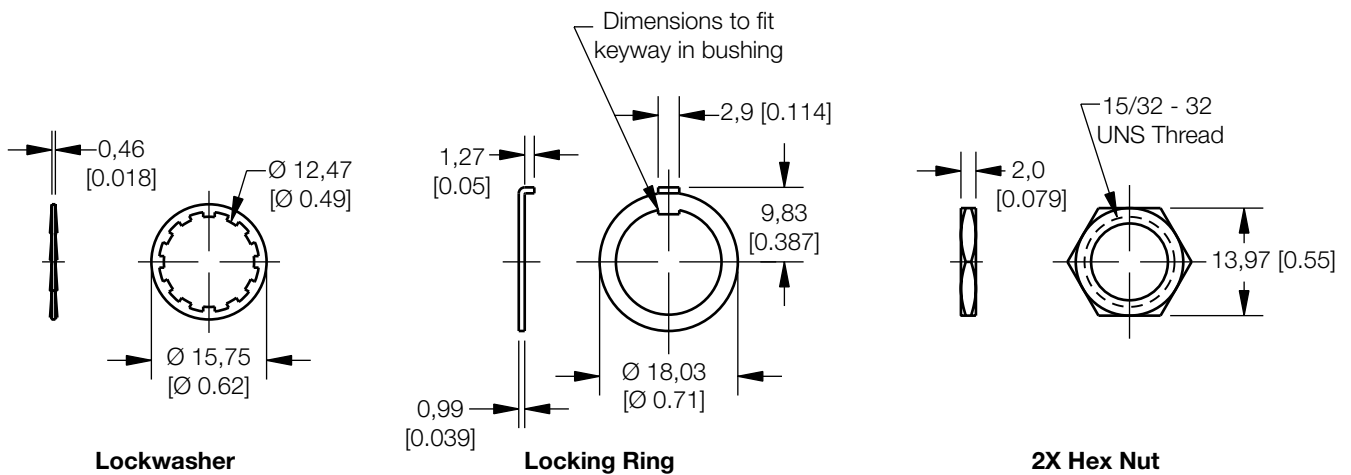


Figure 7. TS Series Hardware



ADDITIONAL MATERIALS

The following associated literature is available at sensing.honeywell.com:

- Product range guide
- Product application-specific information
 - Sensors and switches in front loaders
 - Sensors and switches in mobile cranes
 - Sensors and switches in oil rig applications

Find out more

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office. To learn more about Honeywell's sensing and switching products, call **+1-815-235-6847** or **1-800-537-6945**, visit **sensing.honeywell.com**, or e-mail inquiries to **info.sc@honeywell.com**

Sensing and Productivity Solutions
Honeywell
1985 Douglas Drive North
Golden Valley, MN 55422
honeywell.com

WARNING **PERSONAL INJURY**

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

WARNING **MISUSE OF DOCUMENTATION**

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

Warranty/Remedy

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

