

Scan by Zenith

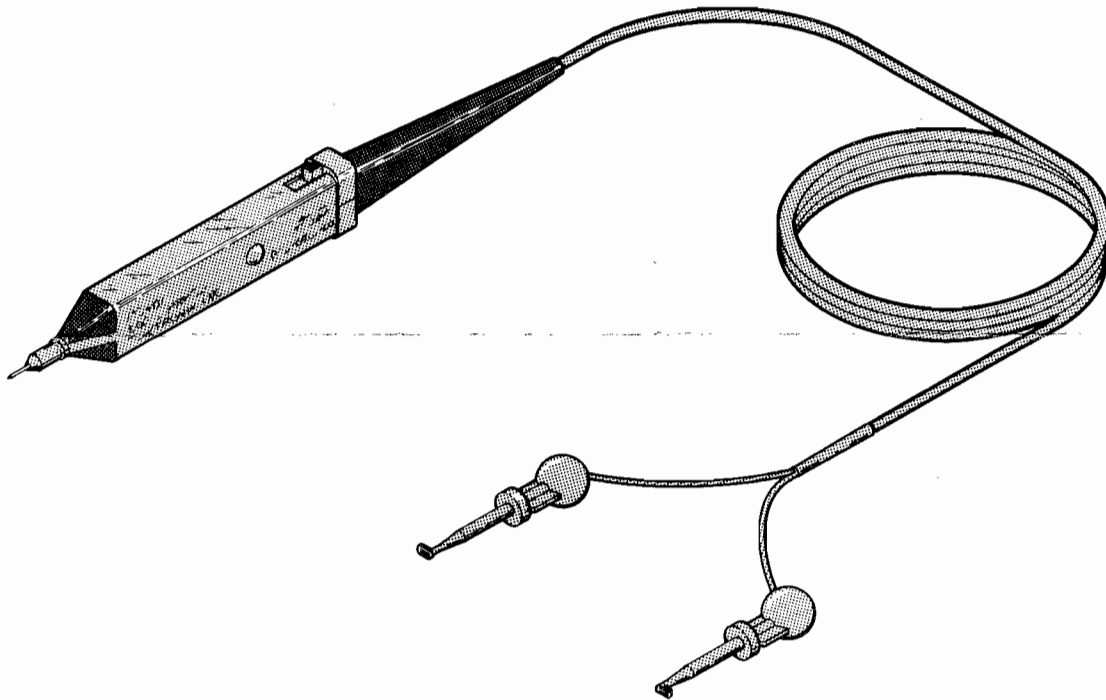
Tektronix[®]
COMMITTED TO EXCELLENCE

data sheet

CSG PUBLICATIONS/RESEARCH

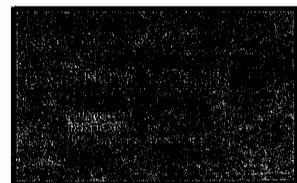
010-6401-00

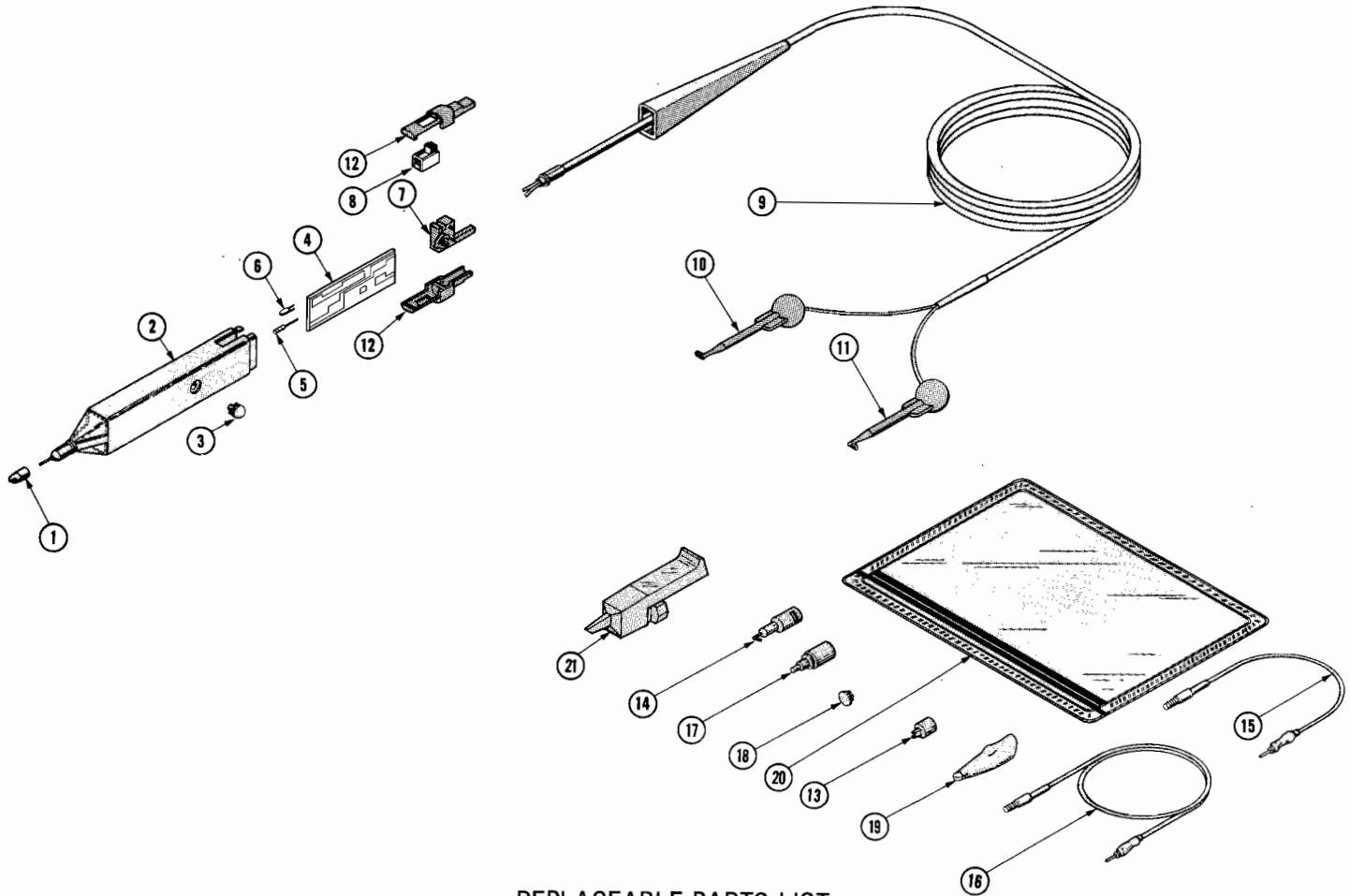
P6401 LOGIC PROBE



The P6401 is an active probe which provides a visual indication of the state of logic circuits in the TTL and DTL systems.

STROBE and STROBE inputs permit sensing of a logic state in coincidence with a gate pulse or other desired time interval pulse. +5 volt power for the P6401 is supplied from the unit under test. Connections for power are accomplished by small retractable hook tips, which may be clipped onto a wire lead or slipped over a 0.025 inch (0.0635 cm) wire-wrap pin.





REPLACEABLE PARTS LIST

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Qty	1 2 3 4 5	Name & Description	Mfr Code	Mfr Part Number
	010-6401-01		1		PROBE, LOGIC: P6401, 60.0 L W/ACCESSORIES	80009	010-6401-01
	010-6401-00		1		. PROBE, LOGIC: P6401, 60.0 L PROBE ONLY	80009	010-6401-00
-1	-----		1		. TIP, TEST PROD: IC TEST		
-2	204-0524-01		1		. BODY, TIP ASSY: W/SENSES	80009	204-0524-01
-3	348-0023-00		1		. PLUG, HOLE: WHITE PLASTIC	02768	OBD
-4	119-0630-00		1		. SUBSTRATE ASSY: SIGNAL INPUT	80009	119-0630-00
-5	214-0592-01		1		. . PLUG, TIP:	80009	214-0592-01
-6	150-0048-02		2		. . LAMP, INCAND: 5V, 60mA	71744	CM683
-7	352-0320-00		1		. . HOLDER, CONN:	80009	352-0320-00
-8	260-0960-01		1		. SWITCH, SLIDE: 0.5A, 120VDC, BLACK BUTTON	80009	260-0960-01
-9	175-1380-00		1		. CA ASSY, SP, ELEC: 2, 23 AWG, 49.25 L	80009	175-1380-00
-10	003-0624-00		1		. . TIP, HOOK: RED EZ Q BALL W/MINI HOOK	08505	OBD
-11	003-0625-00		1		. . TIP, HOOK: BLACK EZ Q BALL W/MINI HOOK	08505	OBD
-12	200-1380-00		2		. . CAP HALF, STRAIN:	80009	200-1380-00
STANDARD ACCESSORIES							
-13	-----		1		TIP, TEST PROD: IC TEST		
-14	206-0114-00		1		TIP, TEST PROBE:	80009	206-0114-00
-15	175-0958-01		1		LEAD, ELECTRICAL: STROBE, 6 INCHES L	80009	175-0958-01
-16	175-0958-00		1		LEAD, ELECTRICAL: STROBE, 12 INCHES L	80009	175-0958-00

¹ Available in packs of 10, PN 015-0201-01 or 100 PN 015-0201-02 only.

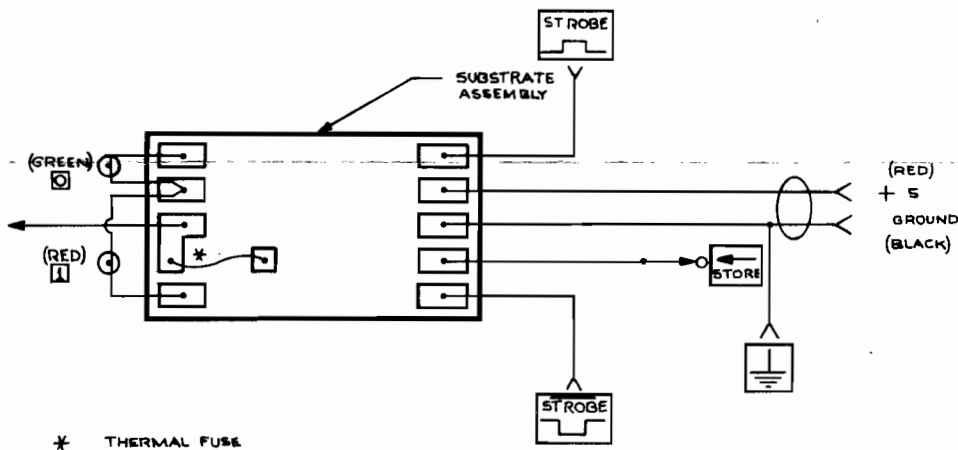
Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Qty	1	2	3	4	5	Name & Description	Mfr Code	Mfr Part Number
-17	206-0137-01			1						TIP, PROBE:	80009	206-0137-01
-18	348-0023-00			1						PLUG, HOLE: WHITE PLASTIC	02768	OBD
-19	344-0046-00			2						CLIP, ELECTRICAL: ALLIGATOR TYPE, W/COVER	80009	344-0046-00
-20	016-0537-00			1						POUCH, ACCESSORY: 6 X 9 INCH LO/ZIPPER	80009	016-0537-00
	062-1693-00			1						DATA SHEET: P6401	80009	062-1693-00
	070-1490-00			1						CARD, INSTR: OPERATORS, P6401	80009	070-1490-00

OPTIONAL ACCESSORIES

-21	013-0106-00			1						TIP, PROBE: RETRACTABLE HOOK	80009	013-0106-00
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CROSS INDEX—MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip
02768	ILLINOIS TOOL WORKS, INC., FASTEX DIV.	195 ALGONQUIN ROAD	DES PLAINES, IL 60016
08505	E-Z HOOK, DIV. OF TEKTEST, INC.	P O BOX 450, 114 E ST. JOSEPH	ARCADIA, CA 91006
71744	CHICAGO MINIATURE LAMP WORKS	4433 RAVENSWOOD AVE.	CHICAGO, IL 60640
80009	TEKTRONIX, INC.	P. O. BOX 500	BEAVERTON, OR 97077



WARRANTY

All TEKTRONIX instruments are warranted against defective materials and workmanship for one year. Any questions with respect to the warranty should be taken up with your TEKTRONIX Field Engineer or representative.

All requests for repairs and replacement parts should be directed to the TEKTRONIX Field Office or representative in your area. This will assure you the fastest possible service. Please include the instrument Type Number or Part Number and Serial Number with all requests for parts or service.

Specifications and price change privileges reserved.

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U.S.A. and foreign TEKTRONIX products covered by U.S. and foreign patents and/or patents pending.

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SPECIFICATIONS

"0" Low Threshold: Green lamp extinguishes at $+0.7$ V within 0.1 V.

"1" High Threshold: Red lamp lights at $+2.15$ V within 0.15 V.

Indeterminate Region: Neither lamp lights between 0.7 V within 0.1 V and $+2.15$ V within 0.15 V.

Minimum Recognizable Pulse Width: 10 ns.

Blink Rate: Lamp blink rate follows input signal repetition rate from dc to approximately 5 Hz and continues at a 5 Hz maximum rate with input signal repetition rates above approximately 5 Hz.

Impedance: Approximately 7.5 k Ω paralleled by approximately 8 pF.

Minimum Circuit Resistance for Open Circuit Indication: 50 k Ω .

Maximum Safe Input: ± 150 V (dc or rms). Fuse opens input within 10 s with 150 V at probe tip.

Overvoltage Indication: Both lamps lit with $+8$ V or more and -2 V or less within 0.5 V at probe tip.

Stroke On and Off Levels: Probe gated "on" with STROBE input level of at least $+1.3$ V within 0.2 V and "off" with less than $+1.3$ V within 0.2 V. Probe gated "on" with STROBE input level of less than $+1.9$ V within 0.2 V and "off" with at least $+1.9$ V within 0.2 V.

Maximum Recognizable Strobe Pulse Width: 20 ns.

Maximum Safe Strobe Input: ± 30 V (dc or rms).

Strobe Input Impedance: 5.6 k Ω within 20% .

INPUT POWER

Operating Range: $+4.5$ V dc to $+5.5$ V dc.

Maximum Operating Current: 200 mA with probe in STORE mode, both lamps lit, and input power at $+5.5$ V dc.

Maximum Safe Input: ± 30 V dc.

THERMAL FUSE LINK RESETTING

(See Parts List, Fig. 2 for part locations)

1. Pry out plastic plug with small screwdriver.
2. Grasp body-tip assembly and gently pull on cable nipple to remove substrate from body-tip assembly.
3. Use a tool to which solder will not adhere to press down on spring-up end of thermal fuse link until it contacts the substrate. Use a low power (15 W) soldering iron with a new unsharpened tip for 2 to 3 seconds to resolder spring-up end of fuse link. **DO NOT USE ADDITIONAL SOLDER** (a special low temperature solder is used).
4. Make sure tip is not bent. Slide substrate into probe body-tip assembly. **MAKE SURE THE SUBSTRATE SLIDES THROUGH THE GROOVES IN THE BODY-TIP ASSEMBLY.** The ceramic substrate may crack if forced in when not properly aligned.
5. Press plastic plug in place.

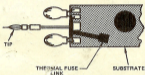


Fig. 1. Thermal fuse link resetting.

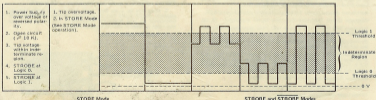
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PS401 LOGIC PROBE INDICATIONS FOR VARIOUS LOGIC CONDITIONS

OFF

ON

BLINKING



With slide switch in STORE (forward) position, probe will indicate and hold a logic 0 (green light) and/or logic 1 (red light) level present at the probe tip. However, if only one indicator is lit, a later event with an opposite logic level will light the other indicator and both will remain lit until the probe is reset (slide switch pulled back to off, then forward to STORE).

A positive-going ≥ 1.3 volt pulse at STROBE \overline{L} input or a negative-going ≤ 1.9 volt pulse at STROBE \overline{U} input will gate probe "on" for duration of strobe pulse. By varying the duration of the strobe pulse and/or time relationship between the strobe pulse and probe tip signal, the logic condition of any segment (≥ 20 ns) of probe tip signal can be determined.