DESCRIPTIVE BULLETIN

FT Flexitest™ switch

There is no equivalent

As the original manufacturer with the longest, most successful history, the unmatched quality of ABB's Flexitext switch is the benchmark for the industry.

With more than 60 years of experience, ABB is the test switch manufacturer with the largest installed base in North America. ABB's Flexitest switch offers the highest quality and is the original FT – there is no equivalent.

Application

ABB Flexitest™ switch, types FT-1 (10 pole, rear connected), FT-1F (10 pole, front connected), FT-1X (10 pole, extended terminals, rear connected), FT-14 (14 pole, rear connected), and associated Test Plugs provide a safe, simple, fast and reliable method to isolate, test, and service installed equipment without disturbing the power system.

FT-14D is a new test switch solution for digital switchgear that uses low-energy voltage and current sensors. The FT-14D switch ties to cutting-edge digital strategies by allowing customers to integrate current and voltage sensors within digital switchgear and Relion® protective relays.

FT-19R, FT-19RX, FT-19RS, and FT-22RS Flexitest switch assemblies for rack and switchboard mounting permit convenient isolation of switchboard relays, meters, and instruments, allowing quick and easy multi-circuit testing by any conventional test method. These assemblies utilize FT-1 and/or FT-14 switches, depending on customer requirements.

Features

- Clear covers that allow for easier visual check on switch status
- Colored switch handles to simply identify circuits
- Rear extended switches for easier, faster access to wiring points
- Cover shield for finger safe testing
- Slotted cover for hanging tags for ease of circuit identification
- 14-pole and 19-inch-wide rack-mounted test switches (FT-14 and FT-19R) to help save space and installation time
- Patented 3D white lettering on the front and 3D white numbering on the rear of the test switch allows for easier identification of poles
- Comprehensive family of test plugs, including SafePlug™ – an individual current test plug with open current transformer (CT) protection
- Online configurator to easily create and order customized switches – spine.abb.com/ ftswitch
- FT-1 and FT-14 meet Ingress Protection IP41 for protection against dripping water from the front with shallow, clear, and black covers installed. FT-1 and FT-14 meet Ingress Protection IP2X for finger safety at the product rear
- FT-1 and FT-14 are RoHS compliant

The most complete family of test switches	
FT-1 	Standard 10 pole, rear connected test switch
FT-1F 	Surface mount switch allows the user to make the same connections as with FT-1, but on the front of the switch.
FT-1X 	Extended length test switch brings the rear terminal connections to the same depth as most panel-mounted protective relays and equipment, for easier and faster access to wiring points. Length extension of 8 inches or 10 inches depth is available.
FT-14 	Provides the same features and reliability as FT-1 but with a maximum of 14 individual poles. Although supplying 40% more capacity than the FT-1, the FT-14 only requires 18% more space.
FT-14D 	Incorporates a passive electronic module on the rear with RJ45 connection to the Relion® relays with low energy voltage and current sensors inputs. The FT-14D maintains the same front interface as the standard FT-14 test switch.
FT-19R 	FT-19R accommodates up to three FT-1 switches mounted on a 19-inch-wide, two-rack unit (2RU), three-rack unit (3RU), or four-rack unit (4RU) high panel suitable for rack or switchboard mounting. These assemblies can be ordered with a full-length clear cover (standard), optional full-length black cover, or individual black or clear covers.
FT-19RX (front view)  FT-19RX (extended view) 	FT-19RX extends the rear terminals of the FT-1 switch to the same depth as most 19-inch rack-mounted equipment, providing improved access to the rear terminals. FT-19RX two-rack unit assemblies (2RU) allow the user to mount protective relays or other equipment in the racks directly above and below the FT-19RX, helping optimize the space in the rack and helping reduce the amount of wire required.
FT-19RS 	FT-19RS assemblies consist of up to two FT-1 switches, two FT-14 switches, or the combination of one FT-1 and one FT-14 switch mounted on a 19-inch-wide, two-rack unit (2RU), three-rack unit (3RU), or four-rack unit (4RU) high panel suitable for rack or switchboard mounting. Any combination of FT-1 or FT-14 switch styles may be selected with individual black or clear covers. Non-ABB equipment is not included with the assembly.
FT-22RS 	FT-22RS assemblies consist of up to three FT-1 or two FT-14 switches mounted on a 22-inch-wide, two-rack unit (2RU), three-rack unit (3RU), or four-rack unit (4RU) high mounting panel suitable for rack or switchboard mounting. Any combination of FT-1 or FT-14 switch styles may be selected with individual black or clear covers. Mounting panels for these assemblies may be constructed of steel or aluminum. Steel panels are commonly available in ANSI 61 gray, ANSI 70 gray, and RAL7035 gray, beige, light sandalwood, thunder blue, black, and white. Panel color or finish, as well as panel height, can be customized to meet user needs. The three-rack unit (3RU) assembly also allows switches to be positioned off-center, in either low or high upper mounting positions in the rack panel, allowing room for special label requirements.
Accessories 	This new ‘cover shield’ is offered for finger safe testing. The ‘ergonomic separate source test plug’ helps with quick circuit testing.
	The new slotted cover allows the user to label each individual switch with a hanging tag for ease of circuit identification and to help ensure correct operation of the power system. The slotted cover includes a removable protective barrier that acts as a safeguard for ‘hot’ blades and is easy to install and remove. Slotted covers are available in shallow black thermoplastic material and can replace existing covers for FT-1 (10 pole), FT-14 (14 pole), and FT-19R rack-mounted Flexitest switches. Note: tags are not included with slotted cover.

Poles
FT-1, FT-1F and FT-1X switches are available in combinations of one to a maximum of 10 individual poles or switch units. FT-14 switches are available in combinations of one to a maximum of 14 poles or switch units. Each pole is identified by a letter (A to J or A to N) visible along the top of the base from left to right (front view).

Individual pole designations are used to identify each pole according to its type or function. In order to develop a complete Switch Arrangement, pole designations should be listed sequentially from left to right to account for every pole position on the switch. Unused poles are identified by the letter X.

Each individual pole is a knife blade type. There are two different types of poles, potential and current.

For quick, easy, user friendly configuration of Flexitest switches, visit spine.abb.com/ftswitch.

Potential poles
Potential poles (P) are configured as single, non-shorting knife blades for use in potential, trip, or control circuits. P designates a potential, trip, or control circuit with a black handle. Potential poles with other color handles are available by replacing the P with the appropriate designation.

Each potential pole can also be described with two characters (P1 to P9). P indicates Potential and the second character is a numeric color code for the switch handle.

Current poles
Current poles are typically configured in sets of two (C-C), for use with current circuits, and consist of a current test jack, a shorting spring, a shorting blade, and a non-shorting blade (see figure below) The positions of the short circuit springs are always visible from the front of the switch.

C designates a single Current circuit, non-shorting pole, with a current test jack and a black handle. Current poles with other color handles are available by replacing the C with the appropriate designation.

Each current pole can also be described with two characters (C1 to C9). C indicates Current and the second character is a numeric color code for the switch handle.

Current poles typically span more than one pole position. Pole designations C-C, C-C-C, C-C-C-C and C-C-C-C-C indicate current shorting poles (make-before-break) with black handles. Note that any color handle may be selected for any pole position by using the appropriate pole designation, ex: 5-R or C-9-7 (alternately C5-C2 or C1-C9-C7).

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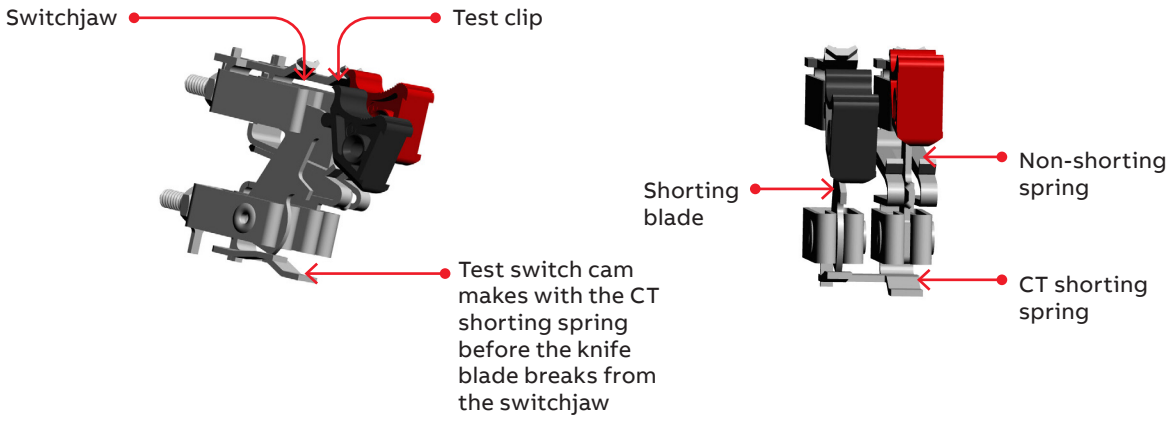
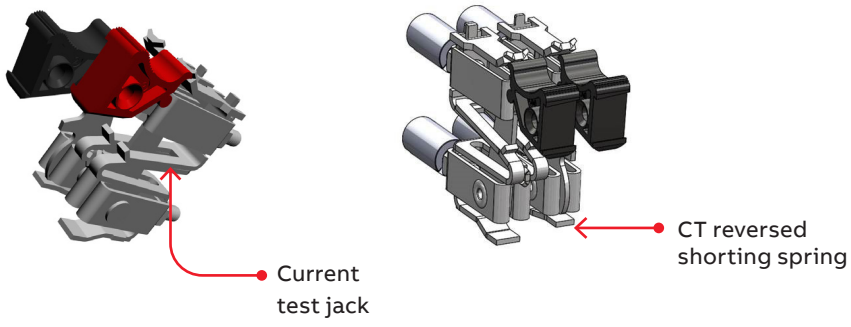
Blade assembly of two-position current poles



Visual FT switch disconnect “make-before-break” operation



The reversed current shorting pole option positions the CT shorting spring, individual current jack and associated knife blades in reverse. The pole designations for this configuration are available only in sets of two and are described with two characters (C+C). The “+” sign is the indication for reversal. Current shorting is performed with the right hand blade versus the traditional left hand blade. Current monitoring is accessed with an individual current test jack in the left hand position.

FT-1 configurator

ABB has a web-based tool to help build any complete FT Switch Arrangement, select options, view schematic details and get style number information. ABB strongly recommends the use of the web-based tool for quick, easy, and user-friendly configuration of Flexitest switches.

The following products can be easily configured:

- FT-1 (10 Pole)
- Front connected FT-1F
- Extended terminals FT-1X
- Replacement switches for FT-19R
- FT-14 (14 Pole)
- FT-14D
- FT-19R switch panel assemblies
- FT-19RX switch panel assemblies
- FT-19RS switch panel assemblies

Visit ABB’s FT-1 configurator website at spine.abb.com/ftswitch.

Warranty

All ABB Flexitest switches and assemblies are backed by a 12-year warranty. The quality of ABB products comes from years of experience and rigorous quality testing programs.

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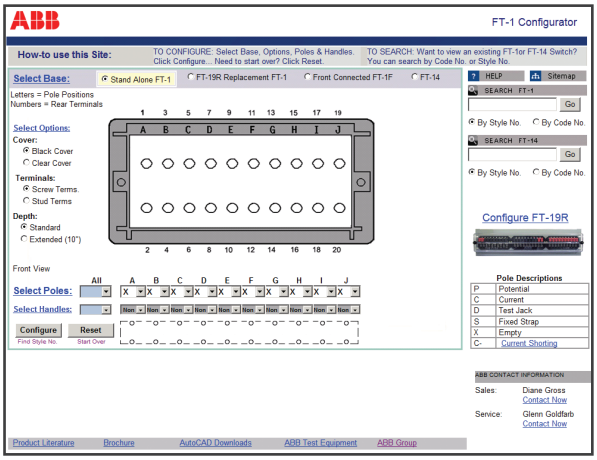
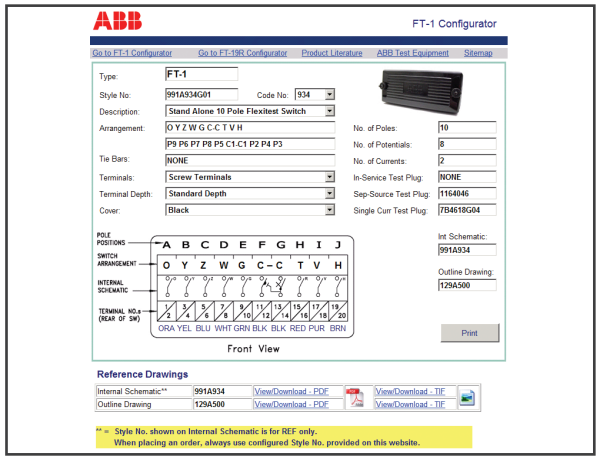
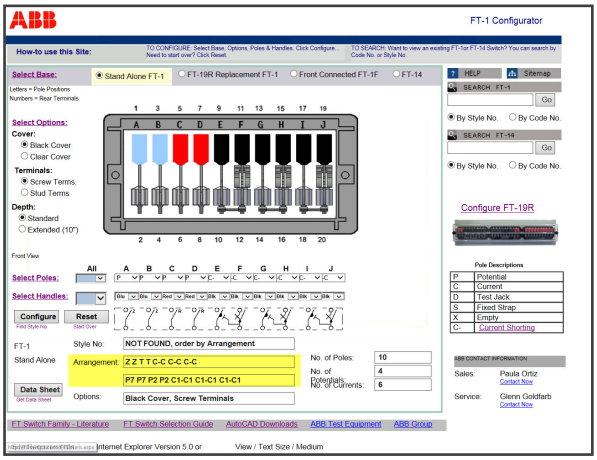
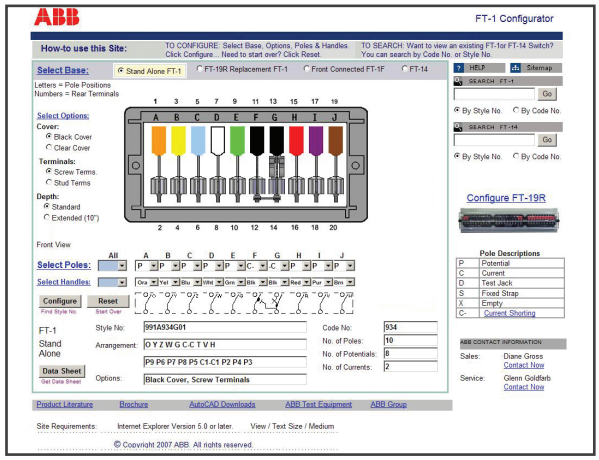
Screenshots from FT1switch.com. When style numbers are not available, order by Arrangement.









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1VAC396332-DB REV C APRIL 2023