What is claimed is:

1. A digital protection relay (100) equipped with a mechanical trip button (18) comprising:

a signal processing module (10) for converting input energizing quantities from a current transformer into a digital value and a comparator (12) being used for comparing the energizing quantities with a threshold setting value; wherein the mechanical trip button (18) is latched with an output tripping contact (20) connected to a shunt trip coil (30) of a circuit breaker (24) such that the output tripping contact (20) remains at the position thereof as long as the mechanical trip button (18) still in pop out position;

a timer (16) linked to a pick-up signal device (14) for inputting a time delay;

a real time clock (84) being linked to an event recorder (82) for inputting a time reference; and

an event recorder (82) for storing a tripping event,

a LED trip status indicator for indicating the protection relay (100) in an operated state;

whereby the operation of the output tripping contact (20) will energize and cause the circuit breaker (24) to trip and the mechanical trip button (18) to pop out; and

whereby the LED trip status indicator is lighted when the mechanical trip button (18) is popped out and remains lighted as long as the mechanical trip button (18) is still in pop out position.

2. The digital protection relay (100) equipped with a mechanical trip button (18) as set forth in Claim 1, wherein the signal from the comparator (12) triggers the output tripping contact (20), to pop out the mechanical trip button (18), and the mechanical trip button (18) is latched with the output tripping contact (20).

3. The digital protection relay (100) equipped with a mechanical trip button (18) as set forth in Claim 1, wherein the signal processing module (10) converts input from the current transformer to a corresponded digital value for comparing by the comparator (12) containing the threshold setting value to generate a signal to be picked up by the pick-up signal device (14).

4. The digital protection relay (100) equipped with a mechanical trip button (18) as set forth in Claim 1, wherein the event recorder (82) is provided with a function to indicate a test trip or an actual trip.

5. The digital protection relay (100) equipped with a mechanical trip button (18) as set forth in Claim 4, wherein a denoted A is indicated on the event recorder (82) if the trip is an actual fault current trip.

6. The digital protection relay (100) equipped with a mechanical trip button (18) as set forth in Claim 4, wherein a denoted P is indicated on the event recorder (82) if the trip is a test trip.

7. The digital protection relay (100) equipped with a mechanical trip button (18) as set forth in Claim 1, wherein the output tripping contact (20) remains at the position thereof as long as the mechanical trip button (20) is still in pop out position.

8. The digital protection relay (100) equipped with a mechanical trip button (18) as set forth in Claim 1, further comprising a LED trip status indicator which is used to indicate the protection relay (100) in an operated state, wherein the LED trip status indicator is lighted when the mechanical trip button (18) is popped out and remains lighted as long as the mechanical trip button (18) is still in pop out position.

9. The digital protection relay (100) equipped with a mechanical trip button (18) as set forth in Claim 1, wherein the LED trip status indicator remains lighted as long as the mechanical trip button (18) is still in pop out position.

10. The digital protection relay (100) equipped with a mechanical trip button (18) as set forth in Claim 1, wherein an auxiliary power supply is provided to the LED trip status indicator to maintain illumination even when main power is interrupted.