Application of the LONG_TIMER as time delay of a protection stage

The DIGSI 4 CFC library contains a LONG_TIMER module, which is capable of functioning like a protection function timer. The timer within a protection function is started by pick-up of the corresponding stage, e.g. in the event of an earth fault, this may be the transgression of the stage IE> (IE> PICK-UP)**.** The timer is started and after expiry of it's set delay time a trip signal is issued (IE> TRIP). However, if the pick-up condition resets while the delay time is active, i.e. The fault disappears, the timer will also reset and only pick up again once the protection stage threshold is exceeded again.

This behaviour may also be replicated with a LONG_TIMER. The timer is used for delays in the range of hours or days. The maximum settable delay is 1193 hours and the smallest resolution is settable in 100 ms steps. The pick-up signal may be randomly selected: You may use an existing pick-up annunciation from the routing matrix or define a new signal (e.g. by means of an upper set point module, after the measured value exceeds the setting a signal is set). The pick-up signal shall then be delayed by the LONG_ TIMER . In Figure 1 the signal flow is shown: simply insert a NEGATOR in front of the LONG_TIMER.

The pick-up signal routed to the start input of the LONG_TIMER starts the delay time. As soon as the pick-up signal disappears, the LONG_TIMER must be terminated and reset. This is achieved via the NEGATOR: The reset of the pick-up signal (Low) produces at the output of the NEGATOR module the positive edge signal for the reset input of the LONG_TIMER. Thereby the LONG_TIMER is reset.

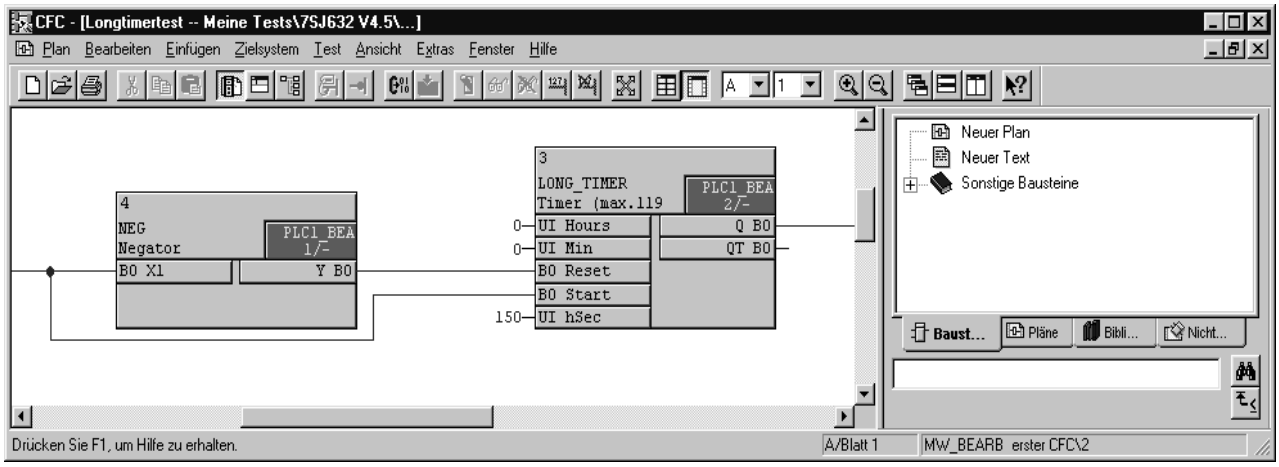

Figure 1: NEGATOR and LONG_TIMER