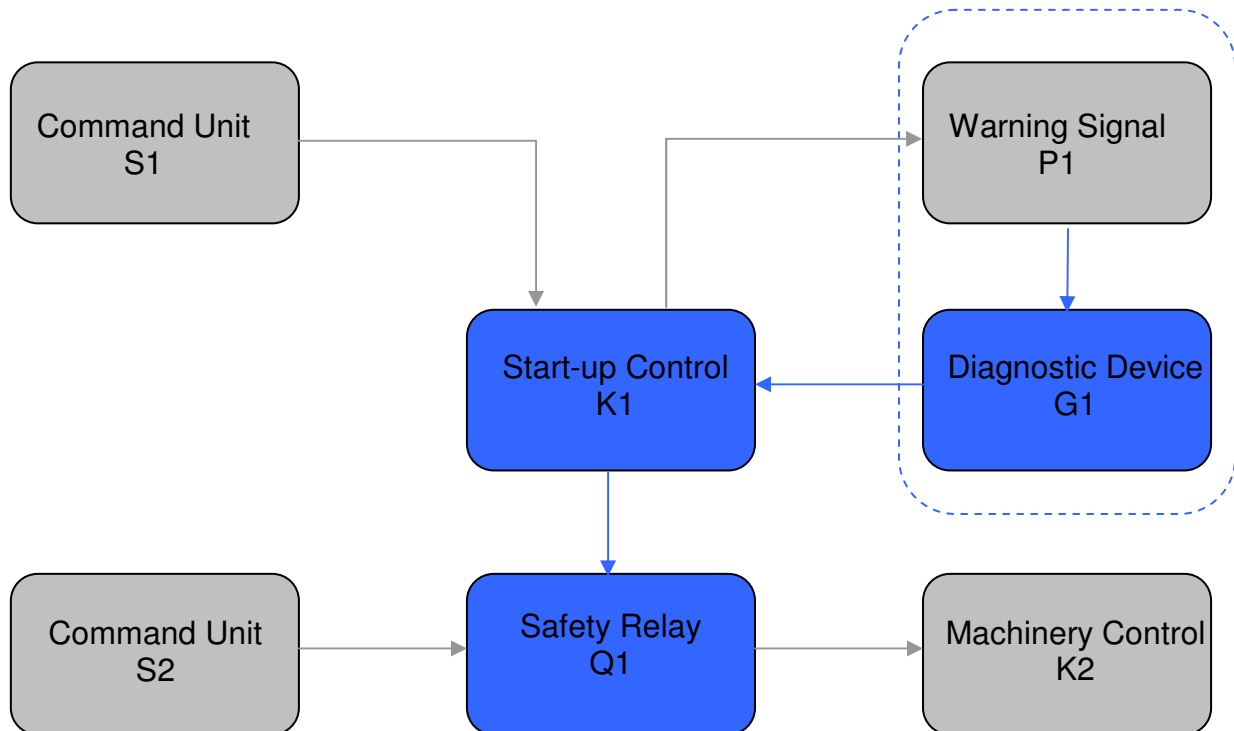


Safety-related controls

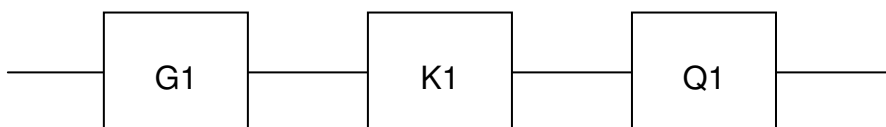
Control example „Machinery – Start up“

Safety function:

Safe settling out of optical and/or acoustical signals, compliance with temporally operations and safe freeing of start up.



Safety related block diagram:



S1 – Command Unit
S2 – Command Unit
K1 – Start-up Control
P1 – Warning Signal
G1 – Diagnostic device
Q1 – Safety Relay
K2 – Machinery control

Description of function:

With activation of control device S1 (e.g. push button) the start up warning will be activated. Safety related Control K1 activates the sounder P1 for required signalling time (e.g. 5 sec. according to EN1034-1).

The safety related diagnostic device G1 checks the function of the sounder and gives this back to the Start-up Control K1. The start-up control K1 checks, whether the temporal run of the signal according is to the set point.

- IF NO -> Interruption of the start-up process
- ✓ IF YES -> Continuance of the activity

The control K1 generates holding time (e.g. 15 sec according EN1034-1) after correct signalling.

After holding time, the availability time will be through K1 initiated, as the safety relay /-switch Q1 will be activated.

During the availability time (e.g. 30 sec according EN1034-1) the machine start up can be triggered through the operation of command unit e.g. triggered through the lock.

If the availability time is expired, then the path between S2 and K2 will be shut down again and machinery start up prevented. The availability time frame will be reopened only though new cycle of entire procedure.

Notes:

The actual task of start up control of entire SRP/CS is only the timing of the action.

The command unit S1 could activate also directly the warning signal P1.

The safety related „Input“ of the control K1 comes solely from the diagnostic device G1, which defines the further action.

The safety switch Q1 could be a part of K1.