

SAFETY MEASURES FOR COLLABORATIVE ROBOTS

Collaborative robots (cobots) are expanding the possibilities of automation and are a core element of Industry 4.0. Designed to work alongside humans, cobots often operate in the human-occupied workspace without safety fencing.

ISO/TS 15066 specifies safety requirements for collaborative industrial robot systems and the work environment. It supplements ISO 10218-1 and ISO 10218-2, which cover the broader safety requirements for industrial robots. The safety requirements outline four separate robot-human collaborative operating modes to ensure that humans are not exposed to unacceptable risks. At least one of these requirements must be fulfilled. Furthermore, visual indication that the robot is in collaborative operation must be ensured.



Safety-rated monitored stop

Robot stops when human enters collaborative space



Hand guiding

Robot motion is controlled by human hand



Speed and separation monitoring

Robot maintains specified distance and speed



Power and force limiting

Inherent design and controls limit impact at contact events



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