



# Conception of safety solutions

## Pressure and force limiting analysis

### Measurement tests according to ISO/TS 15066

Within collaborative robot applications where there exists direct interaction between a human operator and a robot, collisions between the two cannot be overlooked, but rather expected as a reasonable foreseeable event. ISO/TS 15066 specifies the safety requirements for collaborative robot systems and the work environment, and also provides further guidance on collaborative industrial robot requirements given in ISO 10218. Among these specifications are the permissible limits for force and pressure deriving from the collaborate robot and are described as transient and quasi-static forces.



### ISO/TS 15066 Definitions:

**Transient Contact:** Contact between an operator and part of a robot system, where the operator body part is not clamped and can recoil or retract from the moving part of the robot system.

**Quasi-Static Contact:** contact between an operator and part of a robot system, where the operator body part can be clamped between a moving part of a robot system and another fixed or moving part of the robot cell.

Let the TÜV Functional Safety Engineers from tec.nicum perform a pressure and force limiting measurement test, based on the requirements referenced in ISO/TS 15066 to help ensure you are utilizing your collaborative robot safely.

### Report Deliverable

Data from our pressure and force limiting measurement software will be extracted and provided as a pdf. document containing details of the evaluation. This report will provide visuals of the force curves measured, pressure images and calculations for the transient and quasi-static forces.

For more information regarding the pressure and force limit measurement analysis or our other Engineering Services, please contact: