

## CONTROL SYSTEM & CPMS



SVT designs and supplies customized, individual control and monitoring systems according to the respective national and international regulations.



### Redundant and Decentralized Hydraulic Systems

SVT Loading Arms are electrohydraulically driven. A hydraulic unit supplies the power needed. For the highest degree of reliability, the hydraulic units can be equipped with redundant motors and pumps. Pneumatically actuated reserve pumps are also available options.

All SVT Marine Loading Arms have their own set of hydraulic valves for the driving and freewheel position, emergency release, etc. They are placed in the easily accessible and weather-shielded valves cabinet at the riser.

This decentralized concept guarantees the highest reliability. Should, in spite of this concept, a failure of a hydraulic valve occur, it is restricted to only one single loading arm. Moreover, this configuration saves installation costs since only two hydraulic lines along the jetty are needed.



### Different Options for Controlling

The local control panel controls the central operations of all SVT Marine Loading Arms. From the panel, all loading arms are maneuvered and switched to freewheel or drive position. In addition, the state of the individual arms is visually indicated. An optional touch screen panel allows the visualization and processing of further information.

All the essential operating functions can also be carried out from the ship through radio or cable control.



### Programmable Logic Control

The actual control of the arm is performed by programmable logic control (PLC). All different types and versions will be considered and customized according to the particular situations and the wishes of our clients – from high availability, internal redundancy to a genuine multicontrol function, including I/O cards, isolation amplifiers, as well as sensors. All ex-classifications and corresponding IEC are in accordance with the relevant national guidelines. A classification of the controlling system up to SIL 3 is also possible.





- 3-D models of the loading arms
- Different colored areas (Pre-alarm, ESD 1, ESD 2)
- Three different views
- Distance monitoring of the individual alarm ranges
- Visual and acoustic warnings when exceeding the range limits
- Arm display changes automatically
- Alarm is automatically displayed when sounding
- Long-term documentation storage of monitored arm movements
- Menu-controlled program settings
- Multilevel password-protected operation and authorization concept



### Constant Position Monitoring System

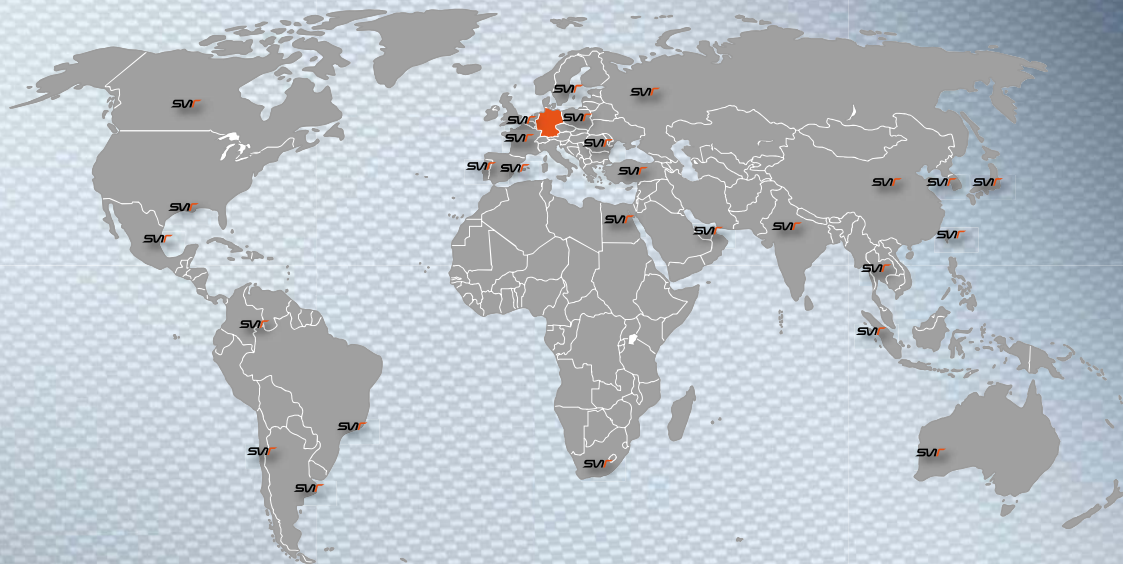
The 3-D Constant Position Monitoring System from SVT displays the position of one or several loading arms in real time.

Pre-alarms, warnings, and release areas are shown in 3-D on the display. Visual and acoustic warnings indicate when an arm exceeds the respective range limits.

The individual distances to the corresponding range limits, and with them, the range available for maneuvering, are continuously calculated, displayed, and safely stored. This is important for later checking of the loading arm's movements.

The 3-D Constant Position Monitoring System does not replace the loading arms' PLC-based self-controlling system. Rather, it offers an easy solution for always being informed about the actual position of each loading arm, even when in a remote control room. The 3-D Constant Position Monitoring System is available in English, German, French, Spanish, Russian, Flemish, Norwegian, and Swedish.





As a member of the GESCO group, SVT GmbH is one of the leading global manufacturers of loading equipment for liquid and gaseous products. SVT has more than 40 years of experience in the design, construction, and production of loading arms. Worldwide installations of loading systems also add to SVT's reputation as a reliable and innovative partner for its clients.

Still today, SVT manufactures and assembles all of its key components exclusively in Germany. Swivel Joints, Emergency Release Couplers, Control Systems, Quick Connect/Disconnect Couplers, among others, are developed, produced, and tested by SVT. This is German engineering at its best. More than 180 loading arms sold to a single customer is convincing proof of our strong belief in quality.

Regional salespeople as well as the right international contact ensure excellent service and extremely rapid response times. A team of highly qualified technicians and engineers set up, test and maintain all of SVT's installations.

Furthermore, SVT is the only company worldwide that is in possession of the technical drawings and know-how of the former Wiese GmbH and Connex GmbH.