CONTEC SYSTEM COMPONENTS

THE MATCHING TRACK SIDE EQUIPMENT FOR EVERY JOB

Switch Machines and Switch Setting and Locking Devices

With the UNISTAR, UNISTAR HR (please see next page for details) and the ECOSTAR, shown on the right hand picture, CONTEC is setting switches to success.

Highest quality of material, oversized components for extra durability and compact design are typical for CONTEC products.

Mono-Block hydraulic units, designed in-house, do not require any hydraulic expertise for operating and are meant to be no-maintenance black box units guaranteeing trouble free services.

Signals

LED signals for various signal devices according to national standards are available from CONTEC. The colour of the LED's can be chosen from a wide variety.

For LRT applications CONTEC designed the UNILIGHT, a unique signal. Thanks to the matrix design, every sign can be shown on one signal only. An almost unlimited number of signs can be stored on the on-board controller.

Current controls with automatic checking of all LED's is a standard as well as automatic brightness controls for optimised day / night or sun / shade operation.

Bonding Equipment

For a permanent connection of cable to the rails, we strongly recommend to use the long term proven CONTEC Bonding Plugs.

The 2012 bonding system is characterized by very simple installation. No special tools such as hydraulic tools are required. A simple hand wrench does it all. A gasket connection to the rails is guaranteed.

INTERNAL PRISM LOCKING DEVICE

Using a few parts only and creating a complex and safe operation, CONTEC achieved this with the Prism Lock.

Placed inside the sealed stainless steel locking unit box (up to Ip 67) all locking and detection modules are located. The central driving cylinder transmits the driving force directly on the locking components and the drive rod.

All units are visible. The overlapping of the locking device can be measured and visibly checked.

The detection system is part of the operation of this setting device. Detector bars acting across the setting direction check the end positions of the lock and the detector rods and lock the detector rods in place as a back up to the locking device.

Indicators allow precise adjustment of the detector rods – day and night.

The latest German Railways specification for locking devices and switch machines are met.

REFERENCES:

CONTEC TRANSPORTATION SYSTEMS

UNISTAR HR: SWITCH SETTING & LOCKING SYSTEM FOR HEAVY RAIL

The UNISTAR HR is the latest generation of CONTEC switch setting and locking systems and it ideally complements the TCS 300.

Various installation options

The compact units allow any position on track. The units can be installed on top of a hollow or concrete sleeper (tie) or between sleepers (ties) where you would usually have the rods.

Switch points as well as movable point frogs can be operated by one or multiple locking units which are identical thanks to adjustable throw. Power supply is always done by one central Mono-Block hydraulic unit.

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SIGNALING SYSTEMS AND TURNOUT CONTROLS

INTERLOCKING SYSTEMS
CONTEC Transportation Systems offers innovative products and system solutions to public transport as well as for heavy rail applications and industrial railways. CONTEC products are well known for their:

- Efficiency
- Maintainability
- Reliability
- Safety

and are proven in worldwide applications.

Since 2005, CONTEC is a member of the leading SIL 4 microprocessor systems market leader for turnout technology.

On a production area of 20,000 sq m the CONTEC team realises in addition to the modern switch machines and signalling controls individual special solutions as well as project planning and installation services.

CONTEC offers technical products with an exceeding product range that is continually growing; we are ahead of the state of the art.

The core of the TCS 300 is a SIL 4 approved microprocessor control system.

Transporting people and goods on rail is the most economically and environmentally friendly mode of mobility. Worldwide heavy investments are made into rail systems as also 1% factor in future transport.

These demands on the rail systems are increasing. Higher clock rates stress material and traffic superintendents. To guarantee the safety and efficiency, the superintendents need to be relieved. At the same time, growing competition requires increasing efficiency of existing or planned new lines.

TCS 300: the sustainable investment

The core of the TCS 300 is a SIL 4 approved microprocessor control system. Thanks to the modular and always expandable and flexible systems, every infrastructure can be integrated in the TCS 300 interlocking system.

Every existing infrastructure can be integrated in the TCS 300 interlocking systems. Standard components of our clients are considered in the planning phase. If there are no special customer requests, our engineers are welcome for recommendations based on their long term experiences from domestic and international projects.

Customer Benefit: Project Orientation

The TCS Visio is a powerful visualization tool communicating with the TCS 300 via TCP/IP protocol. Thanks to the standard protocol, easy accessing the data in a network is possible with every certified workstation.

All functionalities are clearly displayed on flat screen monitors. Touch screen monitors in various configurations are available.

Remote access to the data base is performed using the TC p/Ip protocol, certified for wireless connection.

The operator VEOLIA invested in a CONTEC TCS 300 interlocking system. The combined signalling system covers a wide range of operations at WEG. Track monitoring by axle counters in combination with automatic train stops which were foreseeable for the single track section only was extended over the station area. Concor’s proposal for an integration of the electric operated switches in the signalling system was accepted. The signalling system now works as an interlocking system.

Safety of operation of the railway line was very much increased by combining the functionalities of assisting the superintendents with automatic train stops, operation of the electric operated switches and further items of the track site equipment like key switches, signals etc.

Additional dependencies on the items were defined and are taken into account in the software programming. The monitoring and analysis tool is much more comprehensive.

TCS Visio is used by WEG as a central control system displaying the system status. After inspection by the investor and the local railway authority, the system was commissioned on 15.06.2006.

**LEGEND:**

- Red box with button: depending on
- 25 Hz
- 2Hz key switch
- 1. key for turnout 13
- 2. key for station rudersberg
- 3. switch: operation of the key switch sB 21
- Additional track circuits
- Additional side current

**SYSTEM DATA OF THE WEG INTERLOCKING SYSTEM:**

- Micro-processor control system with SIL 4 approval
- Two redundant SIL 4 microprocessor systems
- 32 INDUSI automatic train stops 2000 Hz
- 16 INDUSI automatic train stops 1500 Hz
- 2 INDUSI automatic train stops 1000 Hz
- 8 INDUSI automatic train stops 750 Hz
- 8 INDUSI automatic train stops 600 Hz
- 4 additional track circuits with local controls
- 2 manual operated switches with key monitoring
- 1 manual operated switch, electric controlled with prior position detector
- 4 signals and 20 signal boards
- Mechanical planning
- Installation by CONTEC engineers
- Testing
- Commissioning

VEO funded 1980 operates four regional railway lines, all of them part of the Stuttgart local transport pass. 14 Regio Shuttles trains and 12 NE 61 train sets are currently in operation.
WEG WÜRTTEMBERGISCHE EISENBAHNGESELLSCHAFT

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TCS 300 INTERLOCKING SYSTEM

Reconstituting a track section and increasing clock rates made a support system for the signaling super intendents necessary.

The operator VEGUW invested in a CONTEC TCS 300 interlocking system. The combined signaling system covers a wide range of operations at WEG. Track monitoring by the TCS 300 in combination with automatic train stops, which was foreseen for the single track section only was extended over the station area. Concep's proposal for integration of the electric operated switches in the signaling system was accepted. The signaling system now works as an interlocking system.

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- Maintainability
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On a production area of 20,000 sqm the CONTEC team realises in addition to the modern switch machines and operating controls individual special solutions as well as production and installation services.

CONTEC offers technical products with an exceptional planning and installation services.

_**EXTRA SAFETY FOR TRAIN OPERATION**_

Transporting people and goods on rail is one of the most environmentally friendly ways of mobility. World wide heavy investments are made into rail system as also 1. factor in future transport.

The demands on the rail systems are increasing. Higher clock rates stress material and traffic super intendents. To guarantee the safety of rail traffic, the super intendents need to be relieved. At the same time, growing competition requires increasing efficiency of existing or planned new lines.

**TCS 300: the sustainable investment**

The core of the TCS 300 is a SIL 4 approved micro processor control system.

Thanks to the modular and always expandable system architecture planning of the project is very flexible. Where a number of systems had to be installed previously, with the TCS 300 only one micro processor system maps the entire operating procedures:

- route setting
- controlling and operating of turnouts
- controlling of routes
- operating automatic train stops
- signal indications according to various standards
- railway stations and marshalling yards

**TCS Visio: HMI the interface to the operator**

TCS Visio is a powerful visualization tool communicating with the TCS 300 via TCP/IP protocol. Thanks to the standard protocol, easy accessing the data in a network is possible with every certified workstation.

All functionalities are clearly displayed on flat screen monitors. Flat screen applications, touch screens, monitors in various configurations are available.

Remote access to the data base is performed using the TC p/IP protocol, certified for wireless connection by VILAN or ISM/GPRS technology.

**Customer Benefit: Project Orientation**

Every existing infrastructure can be integrated in the TCS 300 interlocking systems. Standard components of our clients are considered in the planning phase. If there are no special customer requispects, our engineers are welcome for recommendations based on their long term experiences from domestic and international projects.

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**TCS 300 IN SERVICE**

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**WEG WÜRTTEMBERGISCHE EISENBAHNGESELLSCHAFT**

Rebuilding a track section and increasing clock rates made a support system for the signaling super intendents necessary.

The operator VEDON invested in a CONTEC TCS 300 interlocking system. The combined signaling system covers a wide range of operations of WEG. Track monitoring by operators in combination with automatic train stops, which was foreseen for the single track section only was extended over the station area. CONTEC’s proposal for integration of the electric operated switches in the signaling system was accepted. The signaling system now works as an interlocking system.

Safety of operation of the railway line was very much increased by combining the functionalities of assisting the super intendents with automatic train stops, operation of the electric operated switches and further items of the track side equipment like key switches, signals etc.

Additional dependencies on the items were defined and laid down in the software programming. The monitoring and control panel was far more comprehensive.

TCS Visio is used by WEG as a central control system displaying the system status. After inspection by the existent and the local railway authority, the system was commissioned on 15.06.2008.

**SYSTEM DATA OF THE WEG INTERLOCKING SYSTEM**

- 8 signals and 2 signal boards
- Planning and design
- Installation by CONTEC engineers
- Commissioning

VEDON (Köln) operated four regional railway lines, all of them part of the suburban local transport lines, 4 Regio shuttles trains and 12 NE 81 train sets are currently in operation.
CONTEC SYSTEM COMPONENTS

THE MATCHING TRACK SIDE EQUIPMENT FOR EVERY JOB

Switch Machines and Switch Setting and Locking Devices

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Highest quality of material, oversized components for extra durability and compact design are typical for CONTEC products.

mono-Block hydraulic units, designed in-house, do not require any hydraulic expertise for operating and are meant to be no-maintenance black box units guaranteeing trouble free services.

Signals

LED signals for various signal devices according to national standards are available from CONTEC. The colour of the LED’s can be chosen from a wide variety.

For LRT applications CONTEC designed the UNILIGHT, a unique signal. Thanks to the matrix design, every sign can be shown on one signal only. An almost unlimited number of signs can be stored on the on-board controller.

Current controls with automatic checking of all LED’s is a standard as well as automatic brightness controls for optimised day / night or sun / shade operation.

bonding equipment

For a permanently connection of cable to the rails, we strongly recommend to use the long term proven CONTEC Bonding plugs.

The SDK 02 bonding system is characterised by very simple installation. No special tools such as hydraulic tools are required. A simple torque wrench does it all. A gastight connection to the rail web is guaranteed.

CONTEC TRANSPORTATION SYSTEMS

UNISTAR HR: SWITCH SETTING & LOCKING SYSTEM FOR HEAVY RAIL

The UNISTAR HR is the latest generation of CONTEC switch setting and locking systems and it ideally complements the TCS 300.

Various installation options

The compact units allow any position on track. The units can be installed on top of a hollow or concrete sleeper (tie) or between sleepers (ties) where you would usually have the rods.

Switch points as well as moveable point frogs can be operated by one or multiple locking units which are identical thanks to adjustable throw. Power supply is always done by one central mono-Block hydraulic unit.

Internal Prism Locking Device

Using a few parts only and creating a complex and safe operation, CONTEC achieved this with the Prism Lock.

Placed inside the sealed stainless steel locking unit box (up to IP 67) all locking and detection modules are located. The central driving cylinder transmits the driving force directly on the locking components and the drive rod.

All units are visible. The overlapping of the locking device can be measured and visibly checked.

The detection system is part of the operation of this setting device. Detectors being activated in the setting direction check the end positions of the lock and the detector rods and lock the detector rods in place as a back up to the locking device.

Indicators allow precise adjustment of the detector rods – day and night.

The latest German Railways specification for locking devices and switch machines are met.

REFERENCES:

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CONTEC TRANSPORTATION SYSTEMS

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SNCF
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Métro de Leipzig
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TOM (Kuala Lumpur)
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SIGNALISATION SYSTEMS AND TURNOUT CONTROLS
INTERLOCKING SYSTEMS

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Various installation options

The compact units allow any position on track. The units can be installed on top of a hollow or concrete sleeper (tie) or between sleepers (ties) where you would usually have the rods.

Switch points as well as moveable point frogs can be operated by one or multiple locking units which are identical thanks to adjustable throw. Power supply is always done by one central Mono-Block hydraulic unit.

Internal Prism Locking Device

Using a few parts only and creating a complex and safe operation, CONTEC achieved this with the Prism Lock.

Placed inside the sealed stainless steel locking unit box (up to IP 67) all locking and detection modules are located. The central driving cylinder transmits the driving force directly on the locking components and the drive rod.

All units are visible. The overlapping of the locking device can be measured and visibly checked.

The detection system is part of the operation of this setting device. Detector bars acting across the setting direction check the end positions of the lock and the detector rods and lock the detector rods in place as a backup to the locking device.

Indicators allow precise adjustment of the detector rods – day and night.

The latest German Railways specification for locking devices and switch machines are met.

REFERENCES:

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ÜSTRA Hannoversche Verkehrsbetriebe AG

SIGNALISATION SYSTEMS AND TURNOUT CONTROLS
INTERLOCKING SYSTEMS

Switch Machines and Switch Setting and Locking Devices

Switch Machines and Switch Setting and Locking Devices

With the UNISTAR, UNISTAR HR (please see next page for details) and the ECOSTAR, shown on the right hand picture, CONTEC is setting switches to success.

Highest quality of material, oversized components for extra durability and compact design are typical for CONTEC products.

Mono-Block hydraulic units, designed in-house, do not require any hydraulic expertise for operating and are meant to be no-maintenance black box units guaranteeing trouble free services.

Signals

LED signals for various signal devices according to national standards are available from CONTEC. The colour of the LED’s can be chosen from a wide variety.

For LRT applications CONTEC designed the UNILIGHT, a unique signal. Thanks to the matrix design, every sign can be shown on one signal only. An almost unlimited number of signs can be stored on the on-board controller.

Current controls with automatic checking of all LED’s is a standard as well as automatic brightness controls for optimised day / night or sun / shade operation.

Bonding Equipment

For a permanently connection of cable to the rails, we strongly recommend to use the long term proven CONTEC Bonding Plugs.

The SDK 02 bonding system is characterised by very simple installation. No special tools such as hydraulic tools are required. A simple torque wrench does it all. A gastight connection to the railweb is guaranteed.