/// Socket, push-in terminals, panel mount

Sockets for extreme reliability, within long endurance applications and harsh environments

V88
Socket

Features

- Panel / flush mount
- Very compact solution
- Sturdy push-in terminals
- Solid and stranded wires with ferrules can be inserted easily without using a tool
- Stranded wires without ferrules can be inserted with a flat-bladed screwdriver
- Twin connection per relay contact
- Large wires up to 3.3 mm^2 (AWG 12)
- High density matrix of relay/sockets possible, horizontal and vertical stacked
- Suitable for all railway and industry D8- & KDN relays
- Easy & quick installation (up to 75% reduction of wiring time)
- Positive mechanical keying
- Trifurcated female receiver for tight grip relay pin
- Clear terminal ID

Description

The V88 is a panel/flush mount relay socket. The V88 socket has a base with two highly reliable push-in terminals per relay contact, so looping/daisy chaining can be done on the socket and no external connector or terminal is needed.

Solid and stranded wires with ferrules can be inserted without using a tool or pressing a lever. Wires up to 3.3 mm^2 can be inserted. This quick & easy wiring method saves up to 75% wiring time. Pinning on the socket complies with pinning on the relay.

To prevent fault relay placement the socket can be equipped with mechanical keying to accept only designated identical keyed relays.

Application

The V88 relay socket is suitable for general railway and industry applications with a space saving design. Installation and replacement of relays is made easy and cost saving. No maintenance is required for the user.
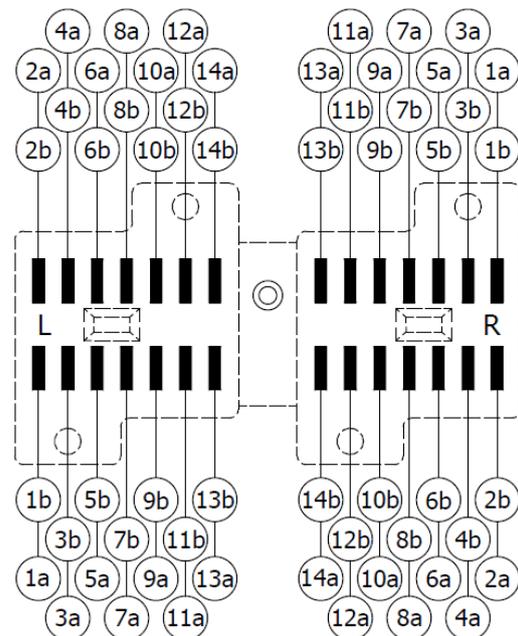
Suitable for all railway and industry D8- & KDN relays.

Connection diagram

Bottom view (wiring side)
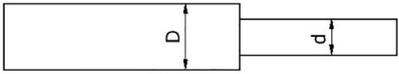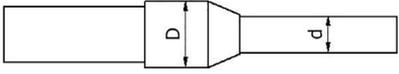See also page 3

Railway compliancy

EN 50155

IEC 60571

EN 45545-2

NF F16-101/102

NF F 62-002

IEC 61373

Industry compliancy

EN 60947-5-1

IEC 61810

REACH

RoHS

Technical specifications

Contact rating		10 A
Dielectric strength	IEC 50155	2500 V, 50 Hz, 1 min
Protecting category	IEC 60529	IP40 (with relay), back side IP20
Mounting		Panel mounting
Max. ambient temperature		80 °C
Weight		143 g
Dimensions		60 x 87.8 x 45.7 mm (depth is 38 mm from front of pane)
Connection	Connection technology	Push-in (stranded wire without ferrule: spring clamp)
	Insulated conductor	Wires with insulation diameter max. 4.25 mm (D) and conductor diameter max. 2.05 mm (d)
	Insulated conductor with insulated ferule	
	Solid conductor	0.08 - 2.5 mm² / 28 - 12 AWG
	Fine-stranded conductor	0.14 - 2.5 mm² / 28 - 12 AWG
	Fine-stranded conductor; with insulated ferrule	0.14 - 1.5 mm²
	Fine-stranded conductor; without insulated ferrule	0.25 - 2.5 mm²
	Wire stripping length	9 - 10 mm / 0.35 - 0.39 inch
	Pole No.	14
	Total number of connection points	28
Material		Housing polyamide 66, 30% glass (EN 45545-2: HL3 for requirements R22, R23, R26)
Max. torque value mounting screws		2.5 Nm (M4 screw)
Accessories		A104 Key receptable
Recommended tooling		Flat screw driver with isolated shaft, blade 3.5 x 0.5 mm or 3.5 x 0.6 mm
Angle of insertion tooling		90° +/- 5° from insertion surface

Remark: in Q4 2021 the V88 is improved. For information about the V88 previous version, contact Mors Smitt.
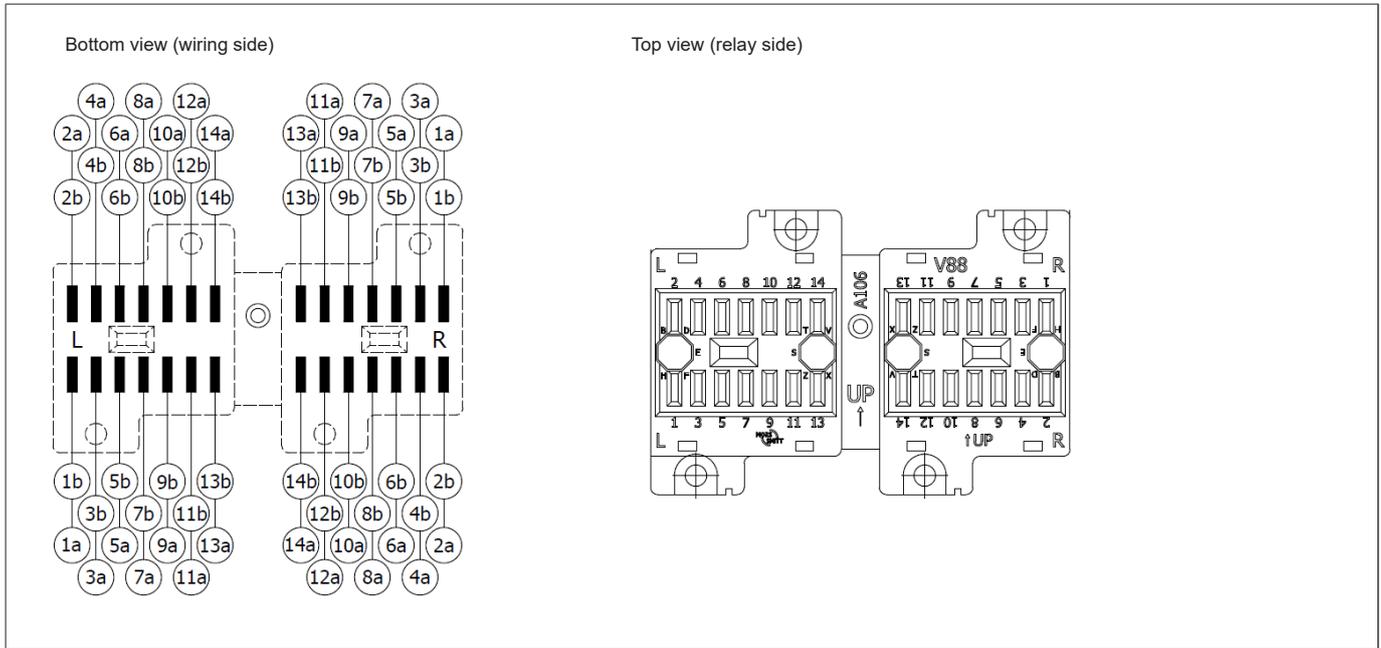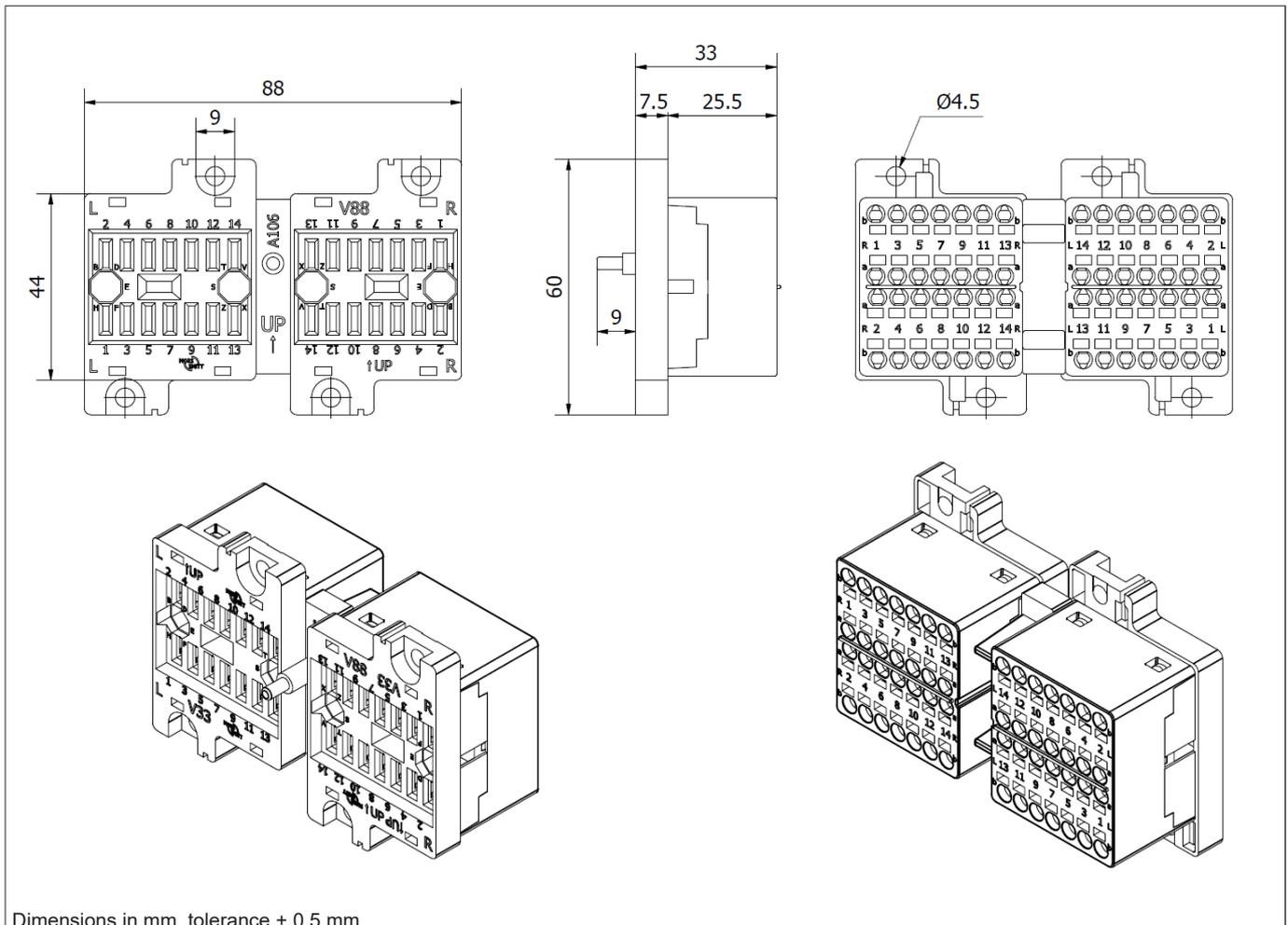
Inserting solid wire	Inserting flexible wire

Connection diagram

Bottom view (wiring side)

Top view (relay side)
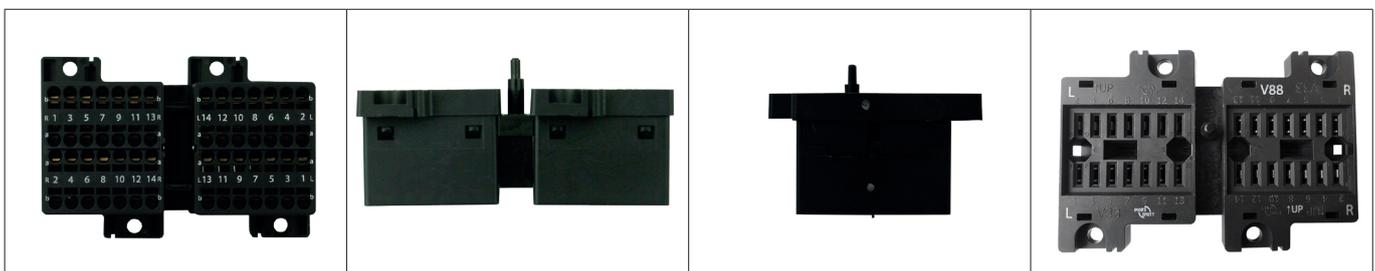
Dimensions

Dimensions in mm, tolerance ± 0.5 mm

Railway compliancy

| EN 50155	Railway applications - Rolling stock - Electronic equipment
IEC 60571	Railway applications - Electronic equipment used on rolling stock
NF F16-101/102	Railway rolling stock - Fire behavior
EN 45545-2	Railway applications - Fire protection on railway vehicles Part 2: Requirements for fire behavior of materials and components
NF F 62-002	Railway rolling stock - On-off contact relays and fixed connections
IEC 61373	Railway applications - Rolling stock equipment - Shock and vibration tests

Industry compliancy

EN 60947-5-1	Electromechanical control circuit devices and switching elements
IEC 61810	Electromechanical elementary relays
EU Directive 2011/65/EU EU Directive 2011/863/EU	EU directives on the use of certain hazardous substances in electrical and electronic equipment (RoHS)
EU Directive 1907/2006	Registration, Evaluation and Authorization of Chemicals (REACH)

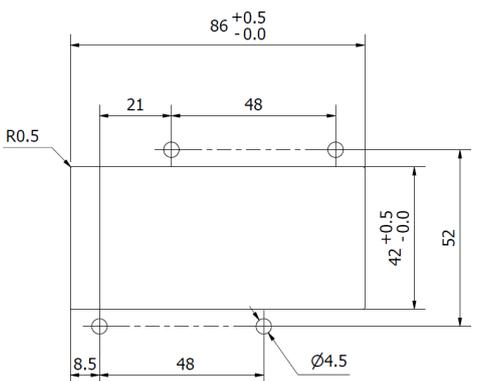## Tri-furcated female receiver for tight grip relay pin
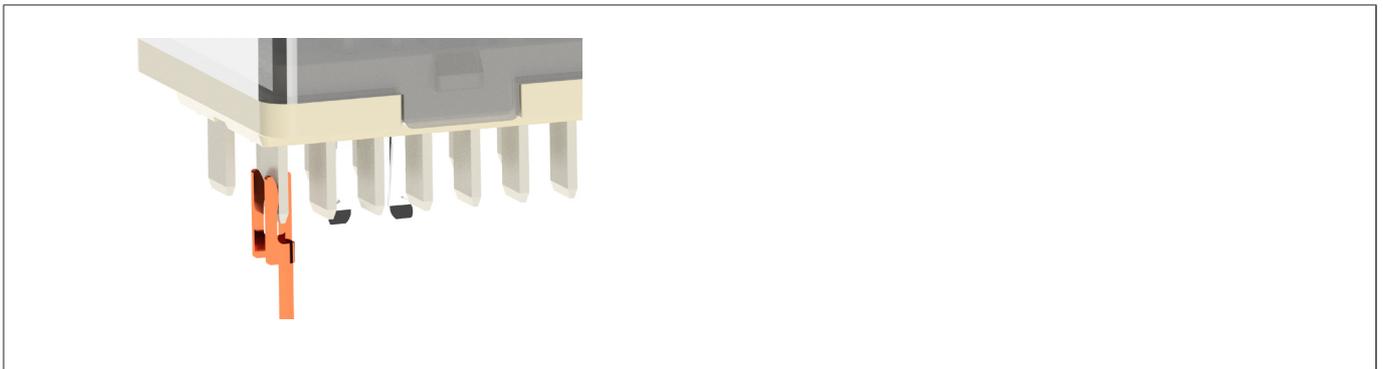
Optimum use of space

MIN 52

MIN88
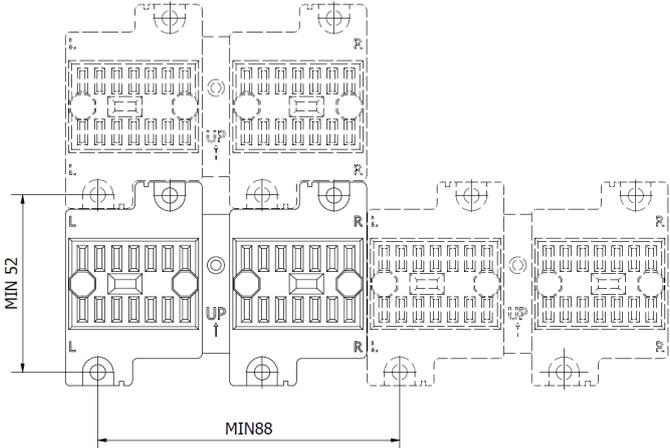
Minimal pattern distance

86 $^{+0.5}_{-0.0}$

21

48

R0.5

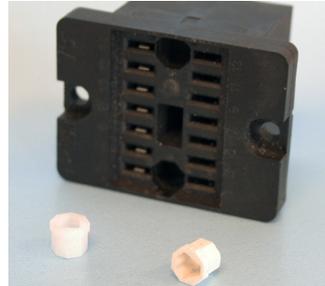42 $^{+0.5}_{-0.0}$

52

8.5

48

Ø4.5

Panel cut-out

Example high density relay module with V33 sockets

backside (wiring side)

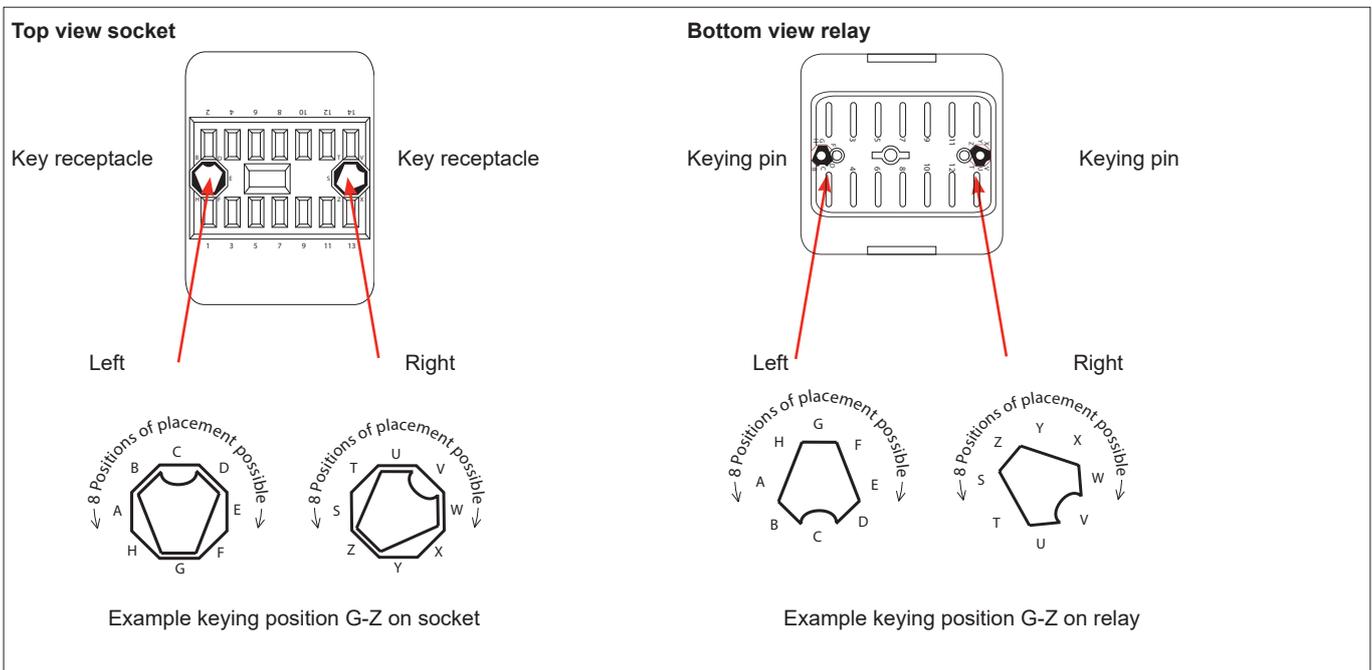# Mechanical keying relay and socket (optional)

Function:
- To prevent wrong installation
- To prevent damage to equipment
- To prevent unsafe situations

Using keyed relays and sockets prevents a relay is inserted in a wrong socket. For example it prevents that a 24 VDC relay is put in a 110 VDC circuit. Positive discrimination is possible per different function, coil voltage, timing, monitoring, safety and non-safety.

The D relay keying option provides 8 x 8 = 64 possibilities. Upon ordering the customer simply indicates the need for the optional keying. Mors Smitt will assign a code to the relay and fix the pins into the relay. The sockets are supplied with loose key receptacles. Inserting the keys into the socket is very simple and self explanatory.

Remark: Sockets and relay shown are examples.

Top view socket

Key receptacle   Key receptacle

Left   Right

8 Positions of placement possible

Example keying position G-Z on socket

Bottom view relay

Keying pin   Keying pin

Left   Right

8 Positions of placement possible

Example keying position G-Z on relay

# Installation and inspection

Installation

Before installation or working on the relay: disconnect the power supply first! (no hot swapping)

Install socket and connect wiring according to the terminal identification. Plug relay into the socket ensuring there is no gap between the bottom of relay and the socket. Reverse installation into the socket is not possible due to the mechanical blocking snap-lock feature.

No external retaining clip needed as the 'snap-lock' will hold the relay into the socket under all circumstances and mounting directions (according shock & vibration requirements IEC 61373, Category I, Class B, Body mounted). If regulations require external retaining clips, these are available as well

Warning!
   - To remove relays from the socket, employ up and down lever movements. Sideway movement may cause damage to the coil wires.
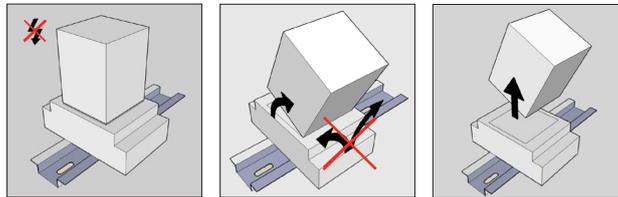
When plugging the relay into the socket, the female trifurcated receivers will automatically cut through the corrosion on the pins and guarantee a reliable connection.
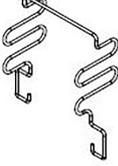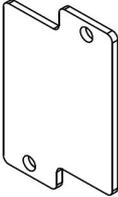
Inspection

If the socket does not work after inspection of the correct wiring and relay connection, replace the unit with a similar model.

When returning products for investigation, please provide all information on the RMA form. Send defective products back to the manufacturer for repair or replacement. Normal wear and tear or external causes are excluded from warranty.

RMA procedure: See www.morssmitt.com

Ordering codes

V33	V88	A104	A030	A033

Remark: In Q4 2021 the V33 and V88 sockets are renewed and have new article numbers. For more information contact Mors Smitt.

Article no.	Code	Description
338000670	V33	Spring terminal relay socket
338001710	V88	Spring terminal relay socket for 8 contact relays
378690100	A104	Key receptacle (2 necessary per V88 socket)
560484013	A030	Retaining clip for D- & DU-relays series of 53 mm high*
560484014	A033	Retaining clip for D- & DU-relays series of 76 mm high*
560882058	-	Blanking plate V33 socket

*Only necessary when regulations require as no external retaining clip needed as the 'snap-lock' will hold the relay into the socket under all circumstances and mounting directions.

Order examples:
V88	Socket without keying
V88 code AB	Socket with keying AB (two A104 key receptacles are inserted in position AB in the factory)
V88 and 2x A104	Socket without keying and 2 separate A104 key receptacles, to be inserted in correct position by user

🌍 **Over 10 million Mors Smitt relays in use in applications worldwide!**

Mors Smitt Asia Ltd.
26/F., Casey Aberdeen House
38 Heung Yip Road, Wong Chuk Hang
Hong Kong
Tel: +852 2343 555
sales.msa@wabtec.com

Mors Smitt France SAS
2 Rue de la Mandinière
72300 Sablé-sur-Sarthe, France
Tel: +33 (0) 243 92 82 00
sales.msf@wabtec.com

Mors Smitt UK Ltd.
Graycar Business Park,
Burton on Trent, DE13 8EN, UK
Tel: +44 (0)1283 357 263
sales.msuk@wabtec.com

Wabtec Netherlands B.V.
Darwinstraat 10,
6718 XE Ede, Netherlands
Tel: +31 (0)88 600 4500
sales.msbv@wabtec.com

Mors Smitt Technologies Ltd.
1010 Johnson Drive,
Buffalo Grove, IL 60089-6918, USA
Tel: +1 847 777 6497
salesmst@wabtec.com

RMS Mors Smitt
19 Southern Court
Keysborough, VIC 3173, Australia
Tel: +61 (0)3 8544 1200
sales.rms@wabtec.com