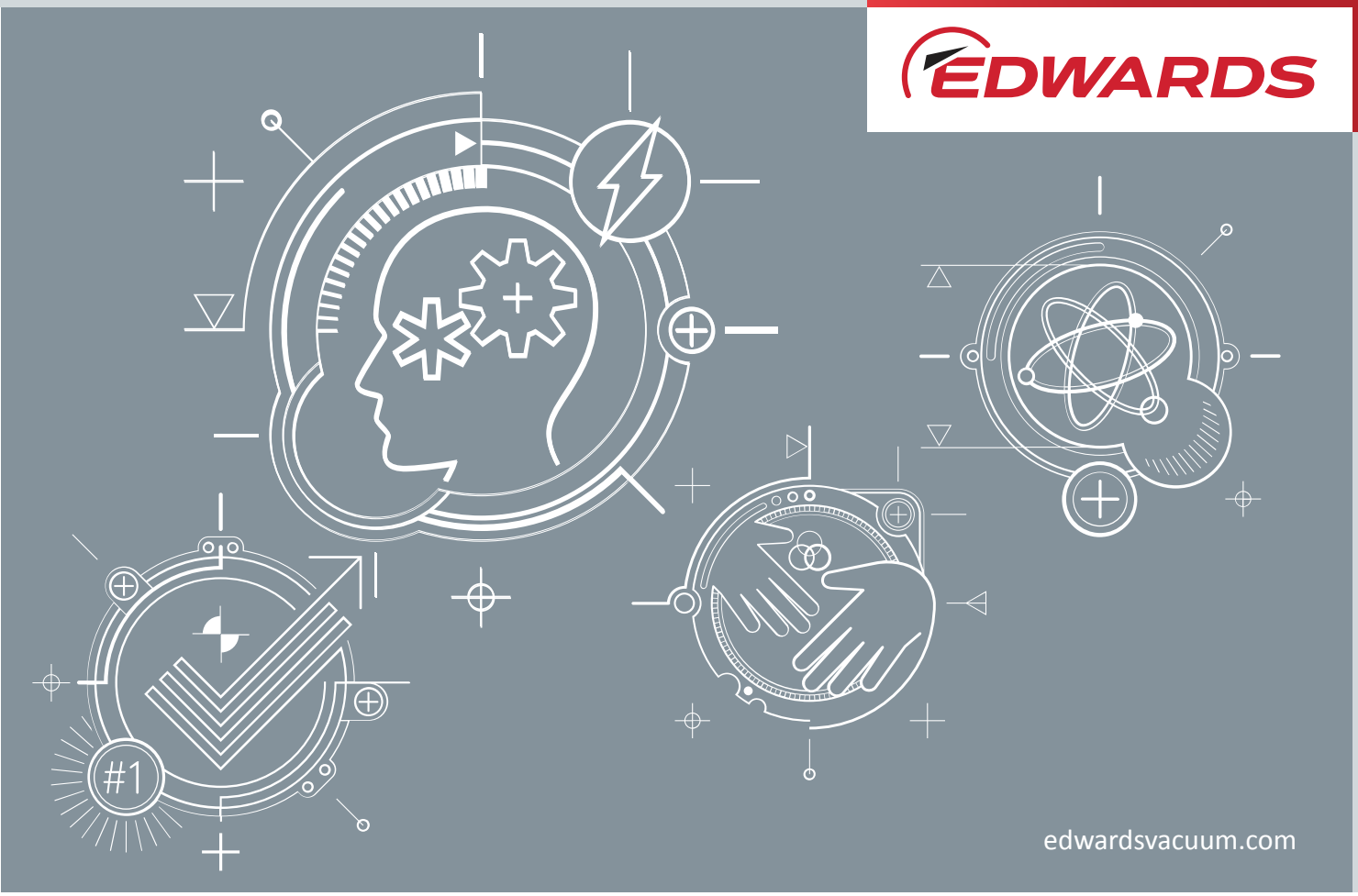


Vacuum Isolation Valve Interface VIV Link

INSTRUCTION MANUAL

Copyright notice

Trademark credit

Disclaimer

The content of this manual may change from time to time without notice. We accept no liability for any errors that may appear in this manual nor do we make any expressed or implied warranties regarding the content. As far as practical we have ensured that the products have been designed and constructed to be safe and without risks when properly installed and used in accordance with their operating instructions.

We accept no liability for loss of profit, loss of market or any other indirect or consequential loss whatsoever.

Product warranty and limit of liability are dealt with in our standard terms and conditions of sale or negotiated contract under which this document is supplied.

You must use this product as described in this manual. Read the manual before you install, operate, or maintain the product.

P200102668

EU Declaration of Conformity

This declaration of conformity is issued under the sole responsibility of the manufacturer:

Edwards Ltd
Innovation Drive
Burgess Hill
West Sussex
RH15 9TW
UK

Documentation Officer
Jana Sigmunda 300
Lutín , 78349
Czech Republic
T: +42(0) 580 582 728
documentation@edwardsvacuum.com

The product specified and listed below

Product Description: Vacuum Isolation Valve Interface

VIV Link C13/C14*	A50637580
VIV Link C19/20*	A50637590
VIV Link Power cable M8 – valve*	A50637392

Is in conformity with the relevant Union harmonisation legislation:

2014/35/EU	Low voltage directive (LVD)
2014/30/EU	Electromagnetic compatibility (EMC) directive Class A Emissions, Industrial Immunity
2011/65/EU	Restriction of certain hazardous substances (RoHS) directive as amended by Delegated Directive (EU) 2015/863

Based on the relevant requirements of harmonised standards and technical documentation:

EN 61010-1:2010+A1:2019	Safety requirements for electrical equipment for measurement, control and laboratory use. General requirements
EN IEC 61326-1:2021	Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements

This declaration, based on the requirements of the listed Directives and EN ISO/IEC 17050-1, covers all product serial numbers from this date on: *2024-08-27*

You must retain the signed legal declaration for future reference
This declaration becomes invalid if modifications are made to the product without prior agreement.

Nick Barratt - Engineering Manager, Eastbourne

Ed Neuss – General Manager, Eastbourne

P200102668

Declaration of Conformity

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Edwards Ltd
Innovation Drive
Burgess Hill
West Sussex
RH15 9TW
UK

Documentation Officer
documentation@edwardsvacuum.com

The product specified and listed below

Product Description: Vacuum Isolation Valve Interface

VIV Link C13/C14*	A50637580
VIV Link C19/20*	A50637590
VIV Link Power cable M8 – valve*	A50637392

The object of the declaration described above is in conformity with relevant statutory requirements:

Electrical Equipment (Safety) Regulations 2016

Electromagnetic Compatibility Regulations 2016
Class A Emissions, Industrial Immunity

Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Relevant designated standards or technical specifications are as follows:

EN 61010-1:2010+A1:2019	Safety requirements for electrical equipment for measurement, control and laboratory use. General requirements
EN IEC 61326-1:2021	Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements

This declaration, based on the requirements of the listed Statutory Instruments and EN ISO/IEC 17050-1, covers all product serial numbers from this date on: *2024-08-27*

You must retain the signed legal declaration for future reference
This declaration becomes invalid if modifications are made to the product without prior agreement.

Signed for and on behalf of Edwards Ltd

Nick Barratt - Engineering Manager, Eastbourne

Ed Neuss – General Manager, Eastbourne

ADDITIONAL LEGISLATION AND COMPLIANCE INFORMATION

EMC (EU, UK): Class A Industrial equipment

Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

RoHS (EU, UK): Material Exemption Information

This product is compliant with the following Exemptions
Annex III:

- 6(c) Copper alloy containing up to 4% **lead** by weight
- 7(a) **Lead** in high melting temperature type solders (i.e. **lead**-based alloys containing 85 % by weight or more **lead**)
- 7(c) I Electrical and electronic components containing **lead** in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound

REACH (EU, UK)

This product is a complex article which is not designed for intentional substance release. To the best of our knowledge the materials used comply with the requirements of REACH. The product manual provides information and instruction to ensure the safe storage, use, maintenance and disposal of the product including any substance based requirements.

Article 33.1 Declaration (EU, UK)

This product contains Candidate List Substances of Very High Concern above 0.1%ww by article as clarified under the 2015 European Court of Justice ruling in case C-106/14.

- Lead (Pb)
  This substance is present in certain brass / electrical or electronic components.
- Lead Silicate / Silicic acid, lead salt
  This substance is present in certain electrical or electronic components.
- 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol (DBMC)
  This substance is present in certain electrical insulation sleeving.

Additional Applicable Requirements

The product is in scope for and complies with the requirements of the following:

2012/19/EU	Directive on waste electrical and electronic equipment (WEEE)

材料成分声明
China Material Content Declaration

	有害物质 Hazardous Substances					
部件名称 Part name 	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr VI)	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
铜接头 Brass connectors	X	O	O	O	O	O
电缆/电线/连接器 Cable/wire/connector	X	O	O	O	O	O
印刷电路组件 (PCA) Printed Circuit Assembly (PCA)	X	O	O	O	O	O
电子元件和控件 Electronics and Controls	X	O	O	O	O	O

O: 表示该有害物质在该部件的所有均质材料中的含量低于 GB/T 26572 标准规定的限量要求。
O: Indicates that the hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572.

X: 表示该有害物质在该部件的至少一种均质材料中的含量超出 GB/T26572 标准规定的限量要求。
X: Indicates that the hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T26572.

Contents

List of Figures

1. Safety and compliance

1.1 Definition of Warnings and Cautions

Important safety information is highlighted as WARNING and CAUTION instructions. These instructions must be obeyed.

The use of WARNINGs and CAUTIONs is defined below.

WARNING:

Warnings are given where failure to observe the instruction could result in injury or death to people. The actual symbol shown varies according to the hazard.

CAUTION:

Cautions are given where failure to observe the instruction could result in minor injury or damage to the equipment, associated equipment or process.

1.2 Safety symbols

The safety symbols on the products shows the areas where care and attention is necessary.

The safety symbols that follow are used on the product or in the product documentation.

	Warning/Caution An appropriate safety instruction must be followed or caution to a potential hazard exists.

2. General description

2.1 Overview

The VIV Link provides a simple interface between the pump fitted with an IEC 60320 C14 or IEC 60320 C20 appliance inlet and the 24 V d.c. variant of the Vacuum Isolation Valve (VIV). The VIV Link makes it easy to install the VIV on any vacuum system.

You can connect the 15-way D-Type logic interface connector on the pump to the mating connector on the VIV Link and operate the pumps (nXDS, XDS35i or any other pump with a similar interface) with a VIV.

The VIV Link protects the vacuum system during:

- Power failure
- Drive failure
- Pump error
- Manual or remote start or stop command

For pumps without a 15-way D-type logic interface connector, the VIV Link can only protect the vacuum system during power failure.

The product must be used as specified in this manual, or the protection provided by the equipment will decrease. Read this manual before you install and operate the VIV Link.

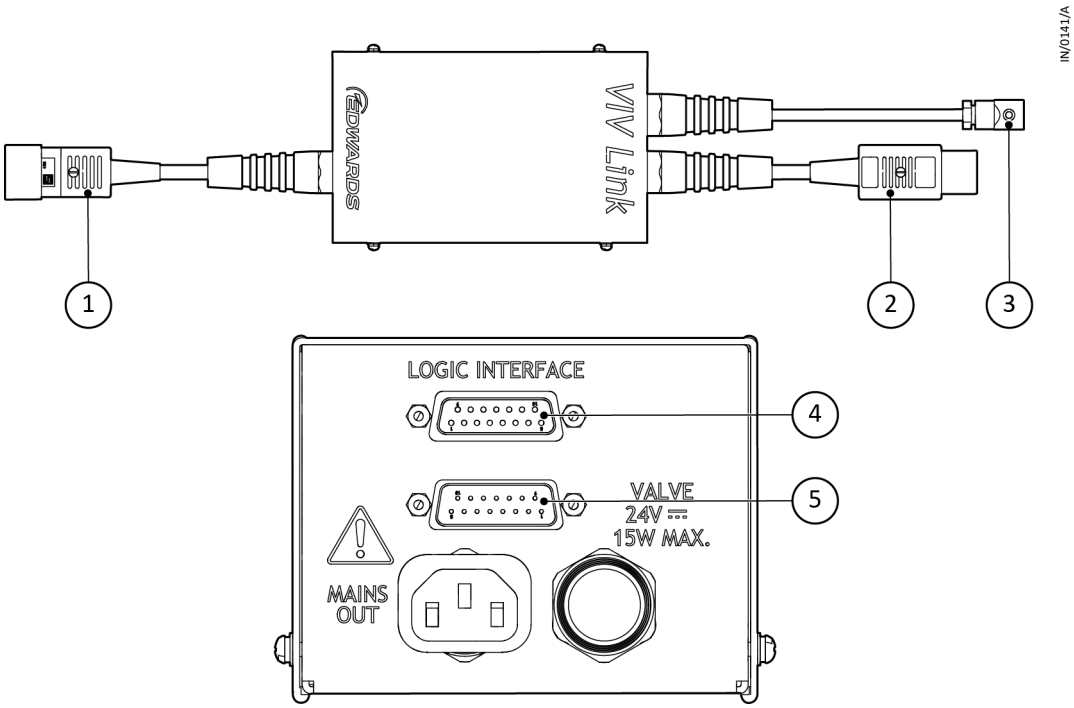
Table 1 VIV Link compatibility

VIV Link	Compatible VIV	Item number
VIV Link C13 or C14		A50637580
	VIV25EKA 24 V d.c.	A50637500
	VIV40EKA 24 V d.c.	A50637510
	VIV50EKA 24 V d.c.	A50637520
VIV Link C19 or C20		A50637590
	VIV25EKA 24 V d.c.	A50637500
	VIV40EKA 24 V d.c.	A50637510
	VIV50EKA 24 V d.c.	A50637520

Note:

Some components in the VIV Link contain Lead (Pb) which is in the REACH SVHC Candidate List.

Figure 1 General view



Item number	Description	Details
1	MAINS IN	Mains power connector to the VIV Link (IEC 60320 C14 or C20)
2	MAINS OUT	Mains power outlet to pump (IEC 60320 C13 or C19)
3	VALVE	24 V d.c. output to VIV
4	15-way D-type logic interface connector (female)	Interface for control signals to and from the pump.*
5	15-way D-type logic interface connector (male)	

** Item 4 and item 5 are linked pin to pin internally to allow the logic interface connectors on the pump to be replicated on opposite gender connector on the VIV Link.*

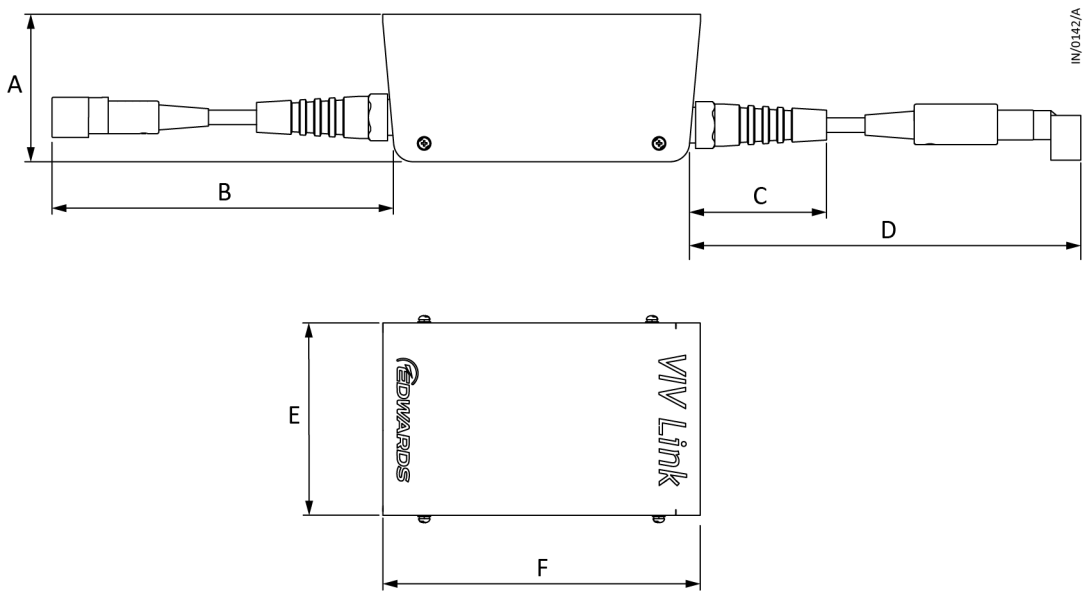
3. Technical Reference

Table 2 Operating and storage conditions

Parameter	Value	Unit
Intended use	Indoor use only, dry locations	-
Ambient operating or storage temperature range	+ 5 to + 40	°C
Maximum operating or storage humidity	Maximum 80% relative humidity for temperatures up to 31 °C decreasing linearly to 50% relative humidity at 40 °C	-
Maximum operating altitude	2000	m
Mounting orientation	Any	-

3.1 Mechanical data

Figure 2 Dimensions



A mm (inches)	B mm (inches)	C mm (inches)	D mm (inches)	E mm (inches)	F mm (inches)	Weight (kg)
85	77	730	85	165	100	1.4
3.3	3	28.7	3.3	6.5	3.9	

WARNING: MAXIMUM RATED CURRENT

Risk of damage to equipment. Do not exceed the maximum rated current through the IEC connector.

Table 3 Electrical data

Parameter	Value	Unit
Pollution degree	2	-
Overvoltage category	II	-
Rated mains voltage	100 - 230 V	V a.c.
Rated mains voltage tolerance	± 10	%
Rated mains frequency	50 or 60	Hz
Power	18	W
Maximum rated current through IEC 60320 connector • VIV Link C13 or 14 • VIV Link C19 or C20	 10 16	 A A
Duty cycle	100%	-
Logic interface rated voltage	0 to 48	V d.c.
Valve output ratings • Voltage • Maximum power • Duty cycle	 24 15 100	 V d.c. W %

4. Installation

4.1 Installation safety

WARNING: INSTALLATION SAFETY

Risk of injury or damage to equipment. Follow the safety instructions and take note of all appropriate precautions. Only suitably trained and supervised technicians may install the VIV Link.

4.2 Unpack and inspect

1. If the VIV Link is damaged, notify the supplier and carrier in writing within three days. Write the item number of the products together with your order number and the supplier invoice number. Retain all packaging materials for inspection.
2. Do not use the product if it is damaged.
3. Check that the package contains the items listed in *Table: Checklist of items* on page 10. If any item is missing, notify the supplier in writing within three days.
4. Store the original packaging material. It may be useful if products need to be returned.

Table 4 Checklist of items

Quantity	Description	Check
1	VIV Link	❑
1	15-way D-type cable	❑
1	15-way D-type logic interface connector plug	❑
1	Instruction manual (A50637840)	❑

4.3 Electrical connection

WARNING: ELECTRICAL SAFETY

Risk of electric shock. Make sure that the electrical installation conforms to all local and national safety requirements. It must be connected to a suitably fused electrical supply with a protective earth connection.

WARNING: HAZARDOUS VOLTAGES

Risk of electric shock. Incorrectly grounded products can be extremely hazardous in the event of a fault.

4.3.1 Connect the VIV Link between the electrical supply and the pump

Make sure that the VIV Link is located in close proximity to the pump. The mains inlet to the VIV Link is classified as a disconnection device and must not be obstructed.

The mains supply cord must have 3 conductors including a protective earth and must be rated for the application. Recommended electrical cables are listed in *Accessories* on page 18.

To connect the VIV: (Refer to *Figure: General view of VIV Link* on page 7)

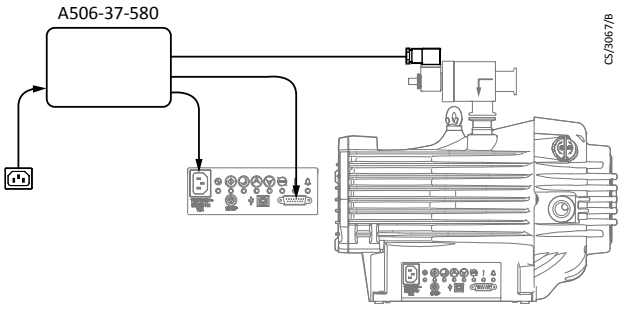
1. Disconnect the mains supply to the pump by removing the IEC 60320 C13 (or C19) socket on the mains lead used to power the pump (not supplied).
2. Connect the MAINS OUT on the VIV Link to the mains inlet on the pump.
3. Connect one end of the 15-way D-type logic interface cable to the logic interface on the pump and the other end to the VIV Link.

Note:

If the logic interface is already in use on the pump, the logic interface cable can be connected to the spare 15-way D-type connector on the VIV Link maintaining any functionality already used.

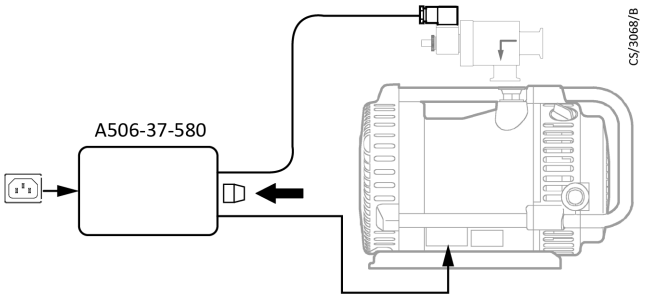
4. Connect the 24 V d.c. supply to the VIV.
5. Connect the IEC 60320 C13 (or C19) socket on the mains cable to MAINS IN on the VIV Link.

Figure 3 VIV Link C14



The VIV Link can be used without the 15-way D-type cable connected to the pump with reduced functionality. This allows any pump fitted with an IEC 60320 C14 or C20 appliance inlet to be protected in the event of power failure with minimal installation required by the operator. Instead of connecting the 15-way D-type logic interface cable between the VIV Link and the pump, connect the logic interface plug directly into the VIV Link (*Figure: Connection of VIV Link to a pump using logic interface connector plug (C13 version shown)* on page 11).

Figure 4 VIV Link C14 with logic interface plug fitted



5. Operation

WARNING: SAFETY CRITICAL OPERATION

Risk of damage to equipment. Do not use the VIV Link in safety critical applications. The VIV Link is not intended to be fail safe.

The product is ready to operate as soon as it is installed.

The VIV Link is designed to operate in series with the electrical supply to the pump. The electrical supply to the VIV Link is connected directly through the VIV Link enclosure to the IEC 60320 MAINS OUT socket on the VIV Link.

Within the VIV Link enclosure is a 24 V d.c. power supply which is connected to the valve outlet on the VIV Link. The 24 V d.c. supply to the valve is switched on when the logic interface connector detects the control signal from the pump being either up to speed (NORMAL) or the inverter drive being healthy (model dependent).

A schematic representation of the logic interface connector can be seen in *Figure: Logic interface connector schematic* on page 13. When the status output is held low, i.e. pin 15 is connected to pin 2 on the 15-way D-type connector, the 24 V d.c. power supply to the valve outlet is switched on.

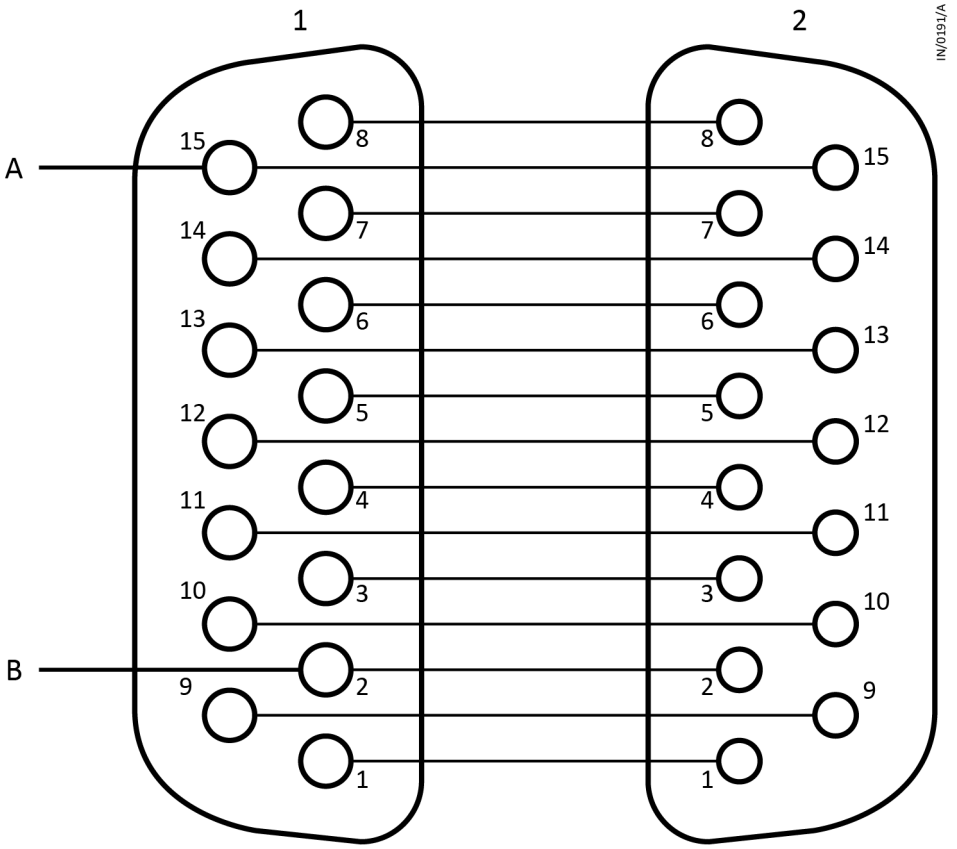
If the pump fails or the speed reduces below normal, power to the valve is switched off and the VIV closes and protects the vacuum system. The power to the valve is switched off under the following conditions:

- Manual or remote start or stop command
- Drive failure
- Pump error
- Power failure

If the logic interface connector plug is fitted (*Figure: Connection of VIV Link to a pump using logic interface connector plug (C13 version shown)* on page 11), pins 2 and 15 on the 15-way D-type connector are linked, and the pump control signal is permanently enabled. As a result, the 24 V d.c. supply is switched on whenever power is supplied to the VIV Link.

Refer to the Instruction Manual supplied with the pump for complete details of the VIV operation.

Figure 5 Logic interface connector schematic



1. 15-way D-type connector (Female)
2. 15-way D-type connector (Male)

A. Normal status output

B. 0 V control reference

Refer to the instruction manual supplied with the pump for complete details of the VIV operation.

6. Maintenance

WARNING: MAINTENANCE SAFETY

Risk of damage to equipment. Do not attempt to dismantle the VIV Link. The product does not contain serviceable parts.

WARNING: ELECTRICAL SUPPLY RATING

Risk of damage to equipment. Make sure that the electrical supply cord is suitably rated for the application.

6.1 Clean the VIV Link

If necessary, use a soft clean dry cloth to clean the exterior of the VIV Link. Do not clean with harsh abrasives or liquids.

7. Fault finding

Fault	The VIV Link fails to operate
Cause	**No power to the product**
Remedy	Make sure that the electrical supply is correct.
Cause	**No control signal to the logic interface connector**
Remedy	Check the connections to the logic interface connector. Pins 2 and 15 on the logic interface connector must be electrically connected in order to switch on the 24 V d.c. supply.

8. Storage

To store the VIV Link:

- Keep the product in its original packaging.
- Store in cool dry conditions until required to use.
- When required, prepare and install the VIV Link as described in *Installation* on page 10.

Refer to *Table: Operating and storage conditions* on page 8 for details of suitable storage conditions.

9. Disposal

Dispose of the VIV Link and any components or accessories safely and in accordance with all local and national safety and environmental requirements.

Particular care must be taken with any components that may have been contaminated with dangerous process substances.

9.1 Return the equipment or components for service

Before you send your equipment to us for service or for any other reason, you must send us a completed Declaration of Contamination of Vacuum Equipment and Components – Form HS2. The HS2 form tells us if any substances found in the equipment are hazardous, which is important for the safety of our employees and all other people involved in the service of your equipment. The hazard information also lets us select the correct procedures to service your equipment.

We provide instructions for completing the form in the Declaration of Contamination of Vacuum equipment and Components – Procedure HS1.

If you are returning a vacuum pump, note the following:

- If a pump is configured to suit the application, make a record of the configuration before returning the pump. All replacement pumps will be supplied with default factory settings.
- Do not return a pump with accessories fitted. Remove all accessories and retain them for future use.
- The instruction in the returns procedure to drain all fluids does not apply to the lubricant in pump oil reservoirs.

Download the latest documents from *www.edwardsvacuum.com/HSForms/*, follow the procedure in HS1, fill in the electronic HS2 form, print it, sign it, and return the signed copy to us.

NOTICE:

If we do not receive a completed HS2 form, your equipment cannot be serviced.

10. Accessories

10.1 Vacuum Isolation Valve (VIV)

We offer a range of Vacuum Isolation Valve (VIV) that can be directly connected to the VIV Link.

Table 5 Accessories

Accessory	Item number
VIV25EKA 24 V d.c.	A50637500
VIV40EKA 24 V d.c.	A50637510
VIV50EKA 24 V d.c.	A50637520

10.2 Electrical cables

Electrical cables are available as accessories and should be used to connect the VIV Link to the electrical supply.

Table 6 Recommended cord sets

Description	Rating	Coupler type	Item number
Cord set assembly, UK	H05VV-F, 3 x 1.5 mm^2, 300 V, 70 °C fitted with a BS1363 UK plug with BS1362 13 A fuse to an IEC 60320 style C19 with a maximum length of 2.5 metres	Straight entry (C19)	A50505003
		Right-angled entry (C19)	A50505006
Cord set assembly, Europe	H05VV-F, 3 x 1.5 mm^2, 300 V, 70 °C fitted with a European Schuko VDE approved 16 A 250 V rated plug with dual earthing contact to an IEC 60320 style C19 with a maximum length of 2.5 metres	Straight entry (C19)	A50506003
		Right-angled entry (C19)	A50506006
Cord set assembly, USA Canada	SJT, 3 x 14 AWG, 300 V, 90 °C, VW-1 fitted with a NEMA 6-15P plug and IEC 60320 style C19 with a maximum length of 3 metres	N/A	N/A
Cord set assembly, UK	H05VV-F, 3 x 1.0 mm^2, 300 V, 70 °C fitted with a BS1363 UK plug with BS1362 10 A fuse to an IEC 60320 style C13 with a maximum length of 2 metres	Straight entry (C13)	A50505000
Cord set assembly, Europe	H05VV-F, 3 x 1.0 mm^2, 300 V, 70 °C fitted with a European Schuko VDE approved 16 A 250 V rated plug with dual earthing contact to an IEC 60320 style C13 with a maximum length of 2 metres	Straight entry (C13)	A50506000

Description	Rating	Coupler type	Item number
Cord set assembly, USA Canada	SJT, 3 x 18 AWG, 300 V, 70 °C, VW-1 fitted with a NEMA 5-15P plug and IEC 60320 style C13 with a maximum length of 2 metres	Straight entry (C13)	A50507000