附件 1：

询价须知

1、采购内容

序号	名称	规格型号	单位	数量	备注
1	车载继电器	满足技术需求	只	500	
2	继电器底座	满足技术需求	只	500	

注：以上为预估数量，按照上述内容签订年度单价合同，以年度采购实际数量为准。

付款方式：开箱验收合格后三个月内，支付该批次货物总额的 100%。

2、报价要求

（1）本项目均以人民币报价。本项目最高投标限价为 1,100,000.00 元（大写：人民币壹佰壹拾万元整），如果供应商的投标报价高于最高投标限价，其投标将被拒绝。供应商报价应遵守《中华人民共和国价格法》，双方发生的所有费用均以人民币进行结算与支付。

（2）供应商报价应为现场交货价，含运输、包装、保险费、法定商检费、型式试验费和质保期内的技术服务费等。税率按照 13%计算,不含税单价=单价÷1.13。若国家对税率进行调整，不含税价格不变，如果供应商中标，接受采购人按国家相关法律法规调整后的税率计算的税款，对合同额进行相应调整。

（3）质保期自通过采购人货物开箱验收合格之日起贰年。

（4）本报价有效期至采购人与中标供应商签署年度框架合同。

（5）供应商承诺按照附件文本与采购人签订年度框架合同。

（6）平台报价与响应文件报价不一致的，以平台报价为准。

3、询价原则上为一次性报价，但采购人有权发起议价。若采购人决定发起议价，供应商应在规定时间内登陆平台响应。

4、响应保证金

响应保证金的金额：人民币 20000.00（大写贰万元整）

响应保证金的形式：银行转账。供应商应从基本户转出，在提交响应文件的截止时间前到账。

账号信息：

开户银行：中国建设银行北京丰台支行

行号：1051 0000 9022

户名：通号（北京）招标有限公司

账号：1105 0165 3600 0000 1491

5、有下列情形之一的，响应保证金将不予退还：

（1）供应商在规定的响应文件有效期内撤销或修改其响应文件；

（2）中标人在收到成交通知书后，无正当理由拒签合同协议书或未按规定提交履约担保。

6、评审小组

评审小组由技术、商务、采购等方面的三人及以上的单数组成。评审小组对供应商提交的响应文件进行符合性和资格性审查，并有权拒绝未通过符合性和资格性审查的供应商上传的报价文件。

7、评审办法

采用经评审的最低投标价法，对满足询价文件实质性要求的响应文件，评审小组将对通过符合性审查和资格性审查的供应商按照其报价由低到高的顺序进行排序并推荐 1-3 名成交候选人。但报价低于其成本的除外。

8、询价文件的澄清

采购人可以书面形式澄清和修改询价文件，并通知所有已购买询价文件的供应商。

9、响应文件的澄清

采购人（评审小组）可以书面形式要求供应商对响应文件中含义不明确、对同类问题表述不一致或者有明显文字和计算错误的内容作必要的澄清、说明或补正。澄清、说明 或补正应以书面方式进行。采购人（评审小组）不接受供应商主动提出的澄清、说明或补正；澄清、说明或补正不得超出询价文件的范围且改变响应文件的实质性内容，并构成响应文件的组成部分；采购人（评审小组）对供应商提交的澄清、说明或补正有疑问的，可以要求供应商进一步澄清、说明或补正，直至满足采购人（评审小组）的要求。

10、采购人（评审小组）发现某一供应商的报价明显低于其他报价，或者在设有标底时明显低于标底，使得其报价可能低于其个别成本的，应当要求该供应商作出书面说明并提供相应的证明材料。供应商不能合理说明或者不能提供相应证明材料的，评审小组应当认定该供应商以低于成本报价竞标，否决其响应文件。

11、供应商应具备承担本询价项目的资质条件、能力和信誉。除满足询价公告规定的资格要求外，供应商不得存在下列情形之一：

（1）为采购人不具有独立法人资格的附属机构（单位）；

（2）与本包件的其他供应商为同一个单位负责人；

（3）与本包件的其他供应商存在控股、管理关系；

（4）为本包件的代理机构；

（5）与本包件的代理机构同为一个法定代表人；

（6）与本包件的代理机构存在控股或参股关系；

（7）被依法暂停或取消投标资格；

（8）被责令停产停业、暂扣或者吊销许可证、暂扣或者吊销执照；

（9）进入清算程序，或被宣告破产，或其他丧失履约能力的情形；

（10）在最近三年内发生重大产品质量问题（以相关行业主管部门的行政处罚决定或司法机关出具的有关法律文书为准）；

（11）被工商行政管理机关在全国企业信用信息公示系统中列入严重违法失信企业名单；

（12）被最高人民法院在“信用中国”网站（www.creditchina.gov.cn）或各级信用信息共享平台中列入失信被执行人名单；

（13）在近三年内供应商或其法定代表人、拟委任的项目负责人有行贿犯罪行为的（以检察机关职务犯罪预防部门出具的查询结果为准）；

（14）法律法规或供应商须知前附表规定的其他情形

12、响应文件的编制和提交

（1）响应文件应按“响应文件格式”进行编写，A4 版式，中文简体文字。所有文字、图表必须清晰可辨。供应商应将加盖单位公章后的响应文件电子版上传至平台。

（2）响应文件应当对询价文件有关交货期、交货地点、响应文件有效期、技术标准和要求等实质性内容作出响应。

（3）供应商应按询价公告规定的时间和方式提交响应文件。逾期提交的或者未按要求提交的响应文件，采购人不予受理。

13、采购人以书面形式向确定的成交供应商发出成交通知书，同时将询价结果通知未成交的供应商。

14、中标服务费

成交供应商在领取成交通知书时须向代理机构缴纳中标服务费。中标服务费按本次采购的每包中标总价为基数，采用差额定率累进计费方式按照下表货物采购费率下浮 10%收取。

费率 中标金额	货物采购	服务采购	工程采购
100 万元以下	1.5%	1.5%	1.0%
100 ~ 500 万元	1.1%	0.8%	0.7%
500 ~ 1000 万元	0.8%	0.45%	0.55%
1000 ~ 5000 万元	0.5%	0.25%	0.35%
5000 万元 ~ 1 亿元	0.25%	0.1%	0.2%
1 ~ 5 亿元	0.05%	0.05%	0.05%
5 ~ 10 亿元	0.035%	0.035%	0.035%
10 ~ 50 亿元	0.008%	0.008%	0.008%

50 ~ 100 亿元	0.006%	0.006%	0.006%
100 亿以上	0.004%	0.004%	0.004%

15、合同授予

（1）履约担保：在签订合同前，确定的供应商向采购人提交履约担保。本次采购项目履约担保金额：无。

（2）签订合同：采购人和确定的供应商应当根据询价文件和确定的供应商的报价文件订立书面框架合同。确定的供应商无正当理由拒签合同的，采购人取消其成交资格并不予退还响应保证金；给采购人造成的损失的，应当予以赔偿。

16.技术要求：

供应商需满足下面的技术要求或提供其他品牌同等产品。

/// Plug-in railway relay with 4 C/O contacts

Rugged plug-in relays for extreme reliability, within long endurance applications and harsh environments

B 400
Safety critical

Description

The B 400 safety critical and heavy duty relay has 4 double make / double break C/O contacts (form Z). Weld no transfer safety contacts are standard.

The plug-in design offers secure locking feature for maximum ease of maintenance (no wires need to be disconnected or other hardware removed for relay inspection or replacement).

The resistance to impact and vibration is conforming the standards for Railway Transported Equipment. Positive mechanical keying of relay to socket is built into relay and socket during manufacture and terminal identifications are clearly marked on identification plate that is permanently attached to the relay.

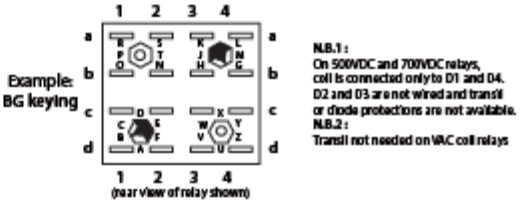
Application

The B 400 relay is designed for ultra reliable heavy duty and safety critical applications such as door control, emergency brake failure, interlocking between traction and breaking around the world in countless railcars.

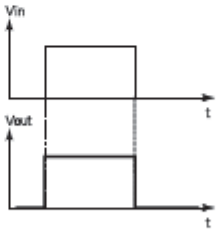
Features

- Instantaneous & safety critical relay
- Plug-in design with secure locking feature for maximum ease of maintenance
- 4 double make / double break C/O contacts (form Z), 12 A
- Weld no transfer contacts standard
- Contact life (mechanical) of 100 million cycles
- • -40 °C...+80 °C operating temperature

Relay pin correspondence



Timing diagram



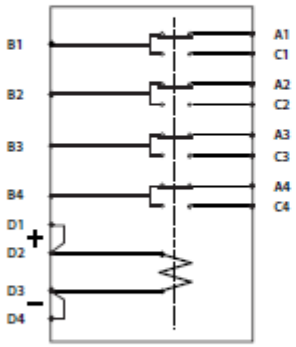
Railway compliancy

NF F 62-002 EN 45545-2, HL3 (R22)
NF F16-101/102

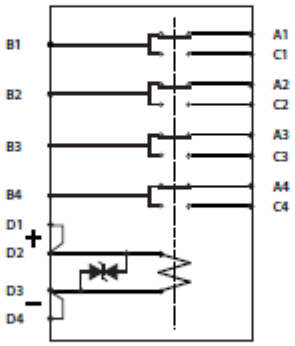
Mors Smitt
A Wabtec Company

Safety critical relay
B 400

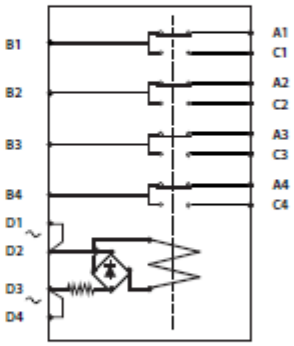
Connection diagram



VDC Models
(no Transil protection)

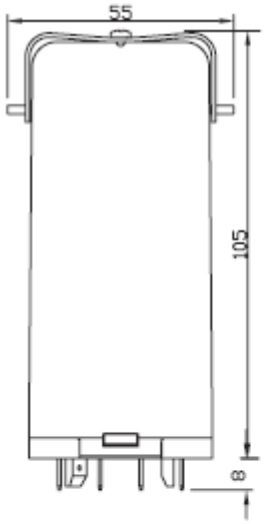


VDC Models
(with Transil protection)

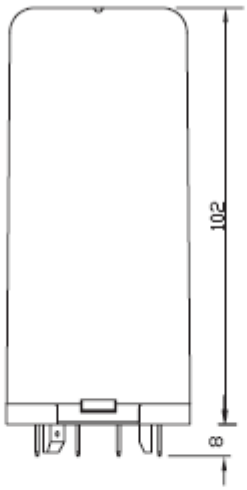


VAC Models
N.B.: Transil not needed on VAC coil relays.

Dimensions (mm)



Used
with locking brackets



Used
with wire locking spring

Mors Smitt
A Wabtec Company

Technical specifications

Safety critical relay
B 400

Coil characteristics - DC versions

Type	U_{nom} (VDC)	$U_{operating}$ (VDC)	P_{nom} (W)	U_{hold} (VDC)	$U_{drop-out}$ (VDC)	R_{coil} (Ω)[1]	L/R (ms)[2]
ME	12	8/16	3.5	6.25	1.25	40	40
AG	24	16/33	3.5	13.5	2.5	170	40
FL	36	25/45	3.5	21	3.5	390	40
DG	48	33/60	3.5	28.5	4.5	625	40
BG	72	48/90	3.5	40.5	6.5	1600	40
US	96	65/120	3.8	50	9.0	2400	40
EG	115	77/144	3.5	60	11.5	4000	40
FG	550	440/660	4.0	300	50	75500	40
UT	700	450/900	4.2	380	60	115000	40

[1] Coil resistance tol.: ± 8% at 20 °C
[2] Valid for closed relay

Coil characteristics - AC versions

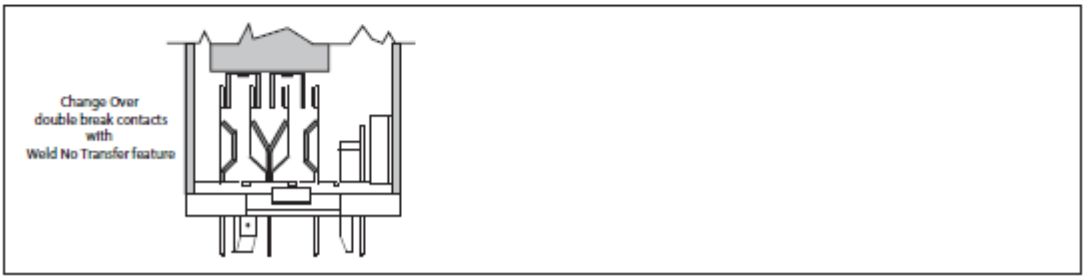
Type	U_{nom} (VAC)	$U_{operating}$ (VAC)	P_{nom} (VA)	U_{hold} (VAC)	$U_{drop-out}$ (VAC)	R_{coil} (Ω)[1]	L/R (ms)[2]
EM	127	88/143	4	71.5	12	4000	40
CG	220	176/242	3	129	21	14350	30

[1] Coil resistance tol.: ± 8% at 20 °C
[2] Valid for closed relay

Contact characteristics - standard version (Ag contacts)

Nominal current		12 A resistive
Nominal breaking capacity and life		3 A at 72 VDC L/R : 0 ms Electrical life: 5 x 10^6 op. 1 A at 72 VDC L/R: 30 ms Electrical life: 2.5 x 10^6 op. 3 A at 220 VAC 50 Hz cosØ=1 Electrical life: 2.5 x 10^6 op. Lamp filament circuit: 200 W at 72 VDC Electrical life: 5 x 10^5 op.
Contact overload withstand		At 24 VDC: 200 A at L/R = 0 for 10 ms (10 operations at the rate of 1 operation per minute)
Contact closure time		Pick-up time N/O < 55 ms Drop-out* time N/C < 25 ms
Contact opening time		Pick-up time N/C < 50 ms Drop-out* time N/O < 15 ms
Minimum contact continuity		20 mA at 24 VDC
Number of contacts		4 double make / double break contacts (form Z)
Contact material		Hard silver overlay laminated to copper
Contact resistance	initial end of life	10 mΩ max at 5 A 40 mΩ max at 5 A

Contact design



Mors Smitt
A Wabtec Company

Safety critical relay
B 400

Electrical characteristics

Dielectric strength	2000 VAC, 1 min between contacts 2600 VAC, 1 min between contacts, coil and frame
Insulation resistance	≥ 1000 MΩ at 500 VDC

Mechanical characteristics

Mechanical life	> 100 x 10^6 operations
Weight	450 g

Environmental characteristics

Vibration	NF F 62-002 The tests are conducted in the X, Y , Z planes at frequency between 10 & 150 cycles (sinusoidal) at 2 g
Shock	NF F 62-002 Tests are applied in both directions in the X, Y & Z planes. Then successive shocks are administered consisting of the positive component of sinusoidal with a value of 30 g, 18 ms
Operating temperature	-40 °C...+80 °C
Humidity	93% RH, 40 °C for 4 days
Salt mist	5% NaCl, 35 °C for 4 days
Protection	IP40
Fire & smoke	Materials: Polycarbonate (cover) / polyester melamine (base) Note: These materials have been tested for fire propagation and smoke emission according standards NF F 16-101, NF F 16-102, EN 45545-2, HL3 (R22) ASTM E162 and ASTM E662, and have been approved to be used on the English/French train channel shuttle.

Railway compliancy

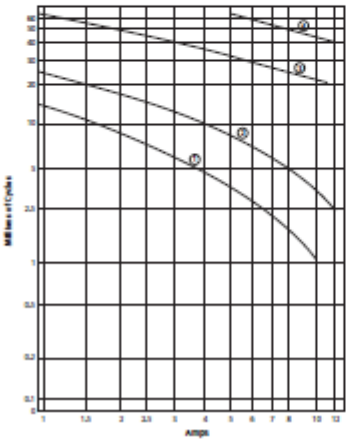
NF F 62-002	Railway rolling stock - On-off contact relays and fixed connections
NF F16-101/102	Railway rolling stock - Fire behavior
EN 45545-2, HL3 (R22)	Fire protection on railway vehicles

Electrical life expectancy

Dynamic relay selection curve #1

AC Current breaking capacity versus life expectancy in millions of cycles.
Rate of contacts opening and closing :: 1200 operations per hour.
Curves shown for resistive load (Power Factor :: 1).

Curve	1	2	3	4
VAC	220	125	48	24

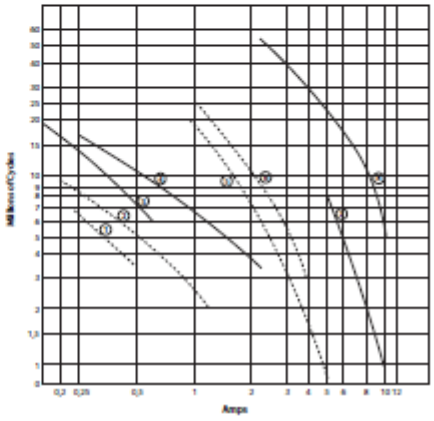


Dynamic relay selection curve #2

DC Current breaking capacity versus life expectancy in millions of cycles.
Rate of contacts opening and closing :: 1200 operations per hour.
Curves shown for inductive load -
——— L/R:: 20 ms continuous current
– – – – L/R:: 40 ms continuous current

* By connecting 2 contacts in series, DC current breaking capacity increases by 50 %

Curves	1-3	2-4	5-7	6-8
VDC	220	125	48	24

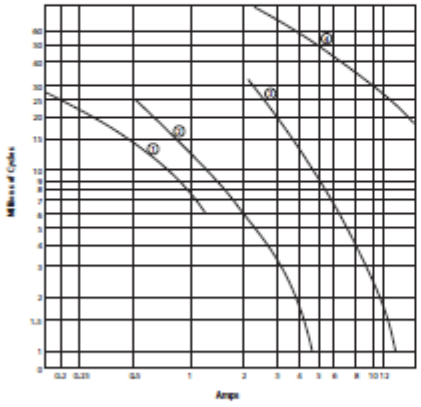


Dynamic relay selection curve #3

DC Current breaking capacity versus life expectancy in millions of cycles.
Rate of contacts opening and closing :: 1200 operations per hour.
Curves shown for resistive load (L/R :: 0). Continuous current.

* By connecting 2 contacts in series, DC current breaking capacity increases by 50 %

Curve	1	2	3	4
VDC	220	125	48	24

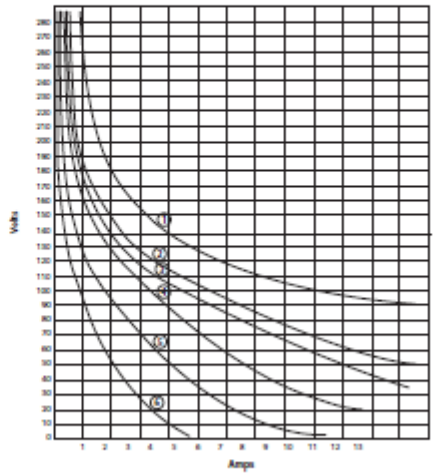


Dynamic relay selection curve #4

Maximum contact breaking capacity versus voltage for a given L/R.
Rate of contacts opening and closing :: 600 operations per hour.
Curves shown for resistive load (L/R::0) and inductive loads. Continuous current.

Life expectancy: 2 Millions of Cycles

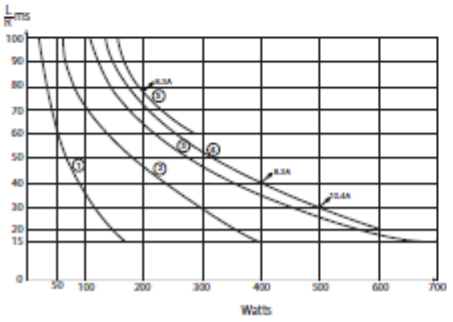
Curve	1	2	3	4	5	6
L/R=	0ms	15ms	20ms	40ms	60ms	100ms



Dynamic relay selection curve #5

Maximum power interruption versus load time constant (L/R) for a given voltage.
Curves shown for resistive loads. I = P/V.

Curve	1	2	3	4	5
VDC	220	125	72	48	24

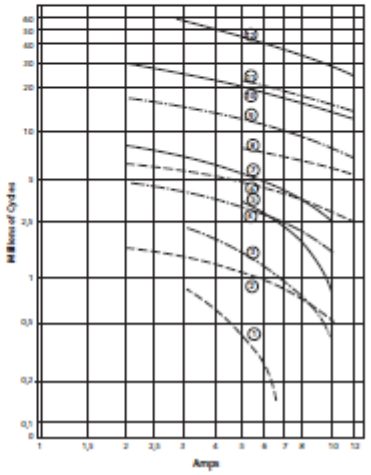


Dynamic relay selection curve #6

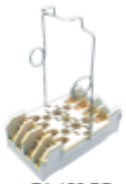
AC Current breaking capacity versus life expectancy in millions of cycles.
Rate of contacts opening and closing = 1200 operations per hour.
Values shown for inductive loads -

Cos Ø = 0.7
Cos Ø = 0.5
Cos Ø = 0.3

Curves	1,3 &5	2,4 &7	6,9 &10	8,11 &12
VAC	220	125	48	24



Mounting possibilities/sockets

 EA 102 B	 EA 103 BF	 EA 104 B	 EA 112 BF	

Panel/flush mounting

EA 102 B	Locking bracket (905843), rear connection, double Faston 5 mm.
EA 102 BF	Wire locking spring (926853), rear connection, single Faston 5 mm.
EA 104 B	Locking bracket (905843), rear connection, single Faston 5 x 0.8 mm.
EA 104 BF	Wire locking spring (926853), rear connection, single Faston 5 x 0.8 mm
EA 112 BF	Wire locking spring (926853), rear connection, crimp contact

Surface/wall mounting

A 103 BF*	Wire locking spring (926853), front connection, M3 screw 6.5 mm. ring terminals (2.5 mm²)
A 105 BF*	Wire locking spring (926853), front connection, single Faston 5 mm

* Mounting possibility on 35 mm rail EN 50022 by adding suffix D to the part number (see socket datasheet)

Note: Keying of relay to socket can be specified by adding the keying letters in the part number. See all details in the related socket datasheet.

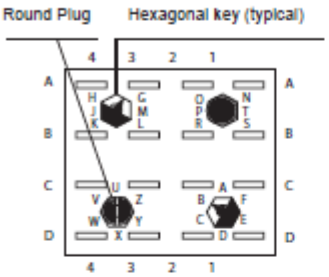
Ordering codes

 905846	 C927210	 P928060	 P928061	 431906654
 414928005	 414905678	 212903020		

Article no.	Part for	Description
905846	Sockets	Locking bracket
C927210	Sockets	Screw for bracket
P928060	Sockets	Metal strap (2)
P928061	Sockets	Metal strap (4)
431906654	Sockets	Wire locking spring
414928005	Sockets	Round plastic plugs
414905678	Sockets & relays	Hexagonal plastic keys
212903020	Relays	Lock pins assy, 2 screws

Keying

Socket (top view) set for BG (72V DC)

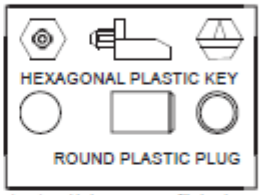


Keying of relay to socket is accomplished by pressing 2 hexagonal keys and 2 round plugs into molded-in recesses on the socket.

Relay keying done in factory.

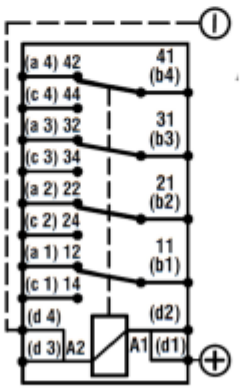
Insert keys so that arrows point to the correct keying letters on socket - see example shown.

Faston socket EA 104 shown. Screw type socket EA 103, front single faston EA 105 and double Faston EA 102 are keyed similarly.



(empty molded re-cesses are filled up by pressing 2 round plastic plugs)

Cover printing - DIN marking



Safety critical relay
B 400

Instructions for use

Installation

Install socket and connect wiring correctly according identification to terminals. Plug relay into socket. Reverse installation into socket is not possible due to mechanical blocking by snap-lock. Don't reverse polarity of coil connection. Relays can be mounted (tightly) next to each other and in any attitude. B400 relay can be mounted in any position. Warning! Never use silicon near relays.

Operation

Before operating always apply voltage to coil to check correct operation. Long term storage may corrode the silver on the relay pins. Just by plugging the relay into the socket, the female bifurcated receivers will automatically clean the corrosion on the pins and guarantee a good connection. Do not use the relay in places with flammable gas as the arc generated from switching could ignite gasses.

Maintenance

Correct operation of relay can easily be checked as transparent cover gives good visibility on the moving contacts. When the relay doesn't seem to operate correctly, please check presence of coil voltage. Use a multimeter. If LED is used, coil presence should be indicated. If coil voltage is present, but the relay doesn't work, a short circuit of suppression diode is possible (The coil connection was reversed). If relay doesn't work after inspection, please replace relay unit by a similar model. Send defective relay back to manufacturer. Normal wear and tear excluded.