

## /// BR930 Series - Electromechanical Signalling Relay

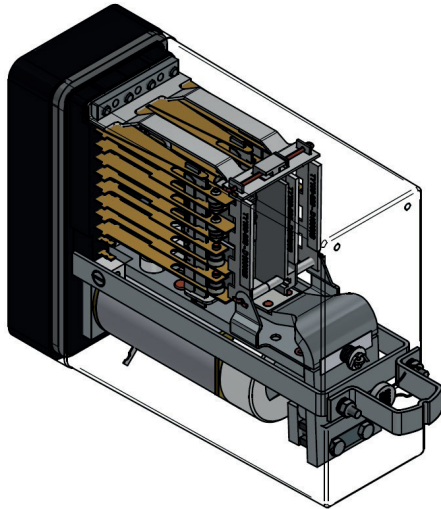
### Technical specification

#### A.C. Immune D.C. Biased Contactor Relay

## TY154/GRP05

#### QBCA (Nominally to BR943)

Equivalent to TY154/GRP02 with additional front signalling contacts.



### General specification

PADS Ref	N/A
Pin code	159 (BEFHJ)
Contact arrangement	2HF 4F and 4B
Coil configuration	Single wound single coil
Resistance of winding(s)	250 Ω
Rating	24 VDC
Weight	1.3 kg
Plugboard	TY081-001 PADS Ref 0085/002081 See plugboard datasheet for more information

### Electrical characteristics

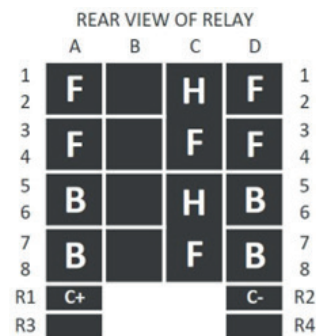
Operate value	Not specified in BR943
Full operate value	19.2 VDC max.
Release value	3.6 VDC min.
Full release value	2.0 VDC min.
Immunity to A.C.	1000 V.A.C. at 50 Hz
Signalling contact pressure	28g (1 oz) min.
Heavy duty contact pressure	56g (2 oz) min.

### Features

This data sheet applies to tractive armature contactor relays for use in line circuits where the relay is required to control the motor circuit of a point machine or other similar heavy-duty applications. They are suitable for use where undesired alternating current at industrial frequency may be present in the circuit.

Of compact modular plug-in design it has heavy-duty and non-weld front signalling contacts and non-weld back signalling contacts and is equipped with a safety interlocking system (pincode) for insertion into mating plugboards.

### Contact arrangement



2HF 4F 4B CONTACTS

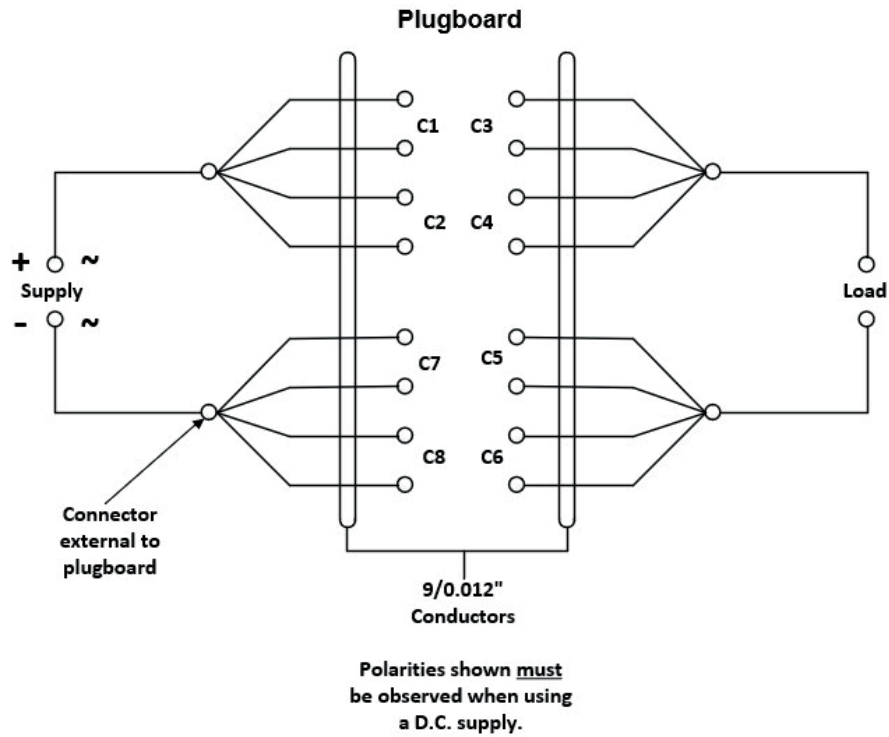
### Specific characteristics

The relay will only operate when positive is applied to R1 and negative to R2.  
The relay will not operate when up to 20 times normal working voltage is applied with the opposite polarity.

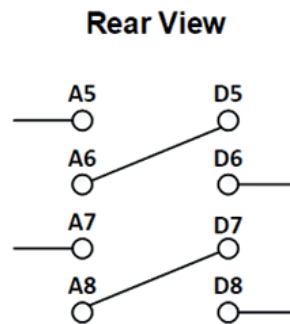
### Heavy-duty front contact characteristics

The rating of the heavy-duty front (HF) contacts is specified as follows:  
They must close the circuit to a D.C. or single phase A.C. 110 V point machine with a performance to BS 581 and carry a current for a minimum of 10 seconds on a 50% duty cycle.  
They must break a current of 30 Amps. in the foregoing conditions when the points are stalled a minimum of 500 times during the service life of the relay.  
They must effectively open the circuit with a current of 100 Amps. D.C and a circuit E.M.F of 130 V but need not remain fully serviceable thereafter.  
They must not weld when operated in a circuit of prospective current of not less than 200 Amps. and a circuit E.M.F. of 130 V D.C

## Arrangement of Connecting Wires to HF Contacts



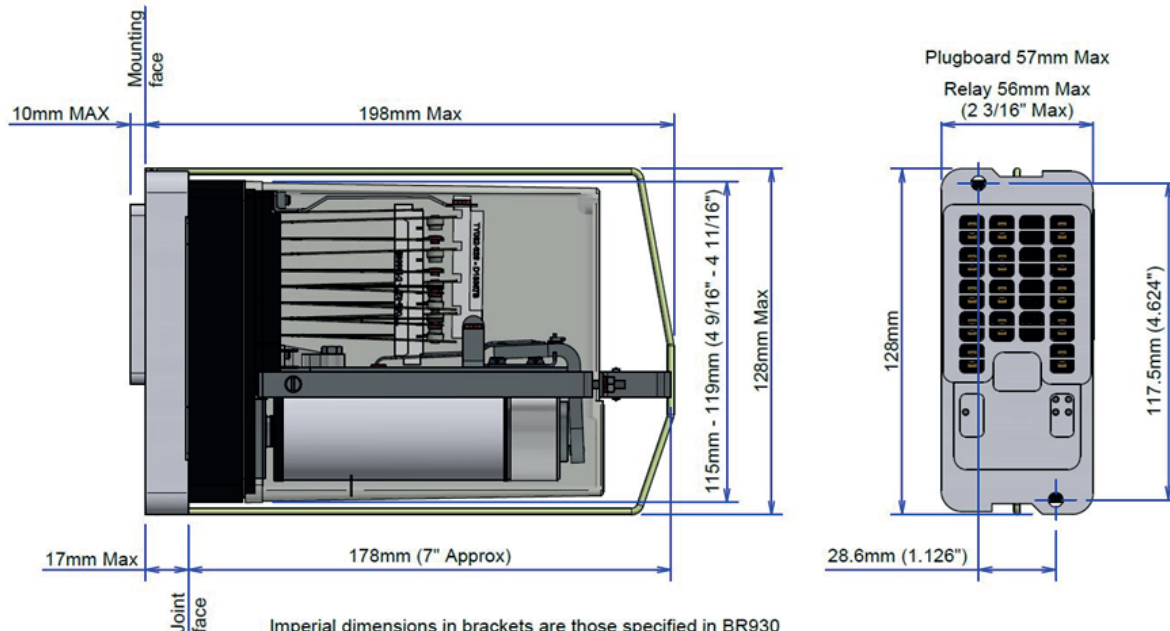
## Arrangement of Connecting Wires to Back Contacts



This arrangement must be used  
to give detection of a welded  
heavy-duty front contact

## A.C. Immune D.C. Biased Contactor Relay TY154/GRP05

### Outline drawing



Imperial dimensions in brackets are those specified in BR930  
 Illustration shows TY083/GRP07 - QNA1 - 8F 4B 50V to BR931A  
 A.C. immune D.C. neutral line relay.

#### Note

The signalling contacts of BR930 relays are optimised to switch traditional signalling circuits consisting of the coils of other relays and incandescent lamps. Their contacts are non-weld, not weld-no-transfer.

Heavy-duty contacts are weld-no-transfer not non-weld. Signalling schemes using these relays must be designed to operate safely within these constraints. Heavy-duty contacts and the related proving contacts must be wired as described in BR943 appendix C. These have been reproduced on page two of this datasheet.

Furthermore, it is the operators' responsibility to ensure compliance with the following:

General requirements of clause 5.2 of BR930 and clauses 8.1 and 8.2 of BR943.

Circuits switched by signalling contacts with the requirements of clauses 1.2 and 12.1 of BR930.

Circuits switched by heavy-duty contacts must not switch a load exceeding that of a points machine to BS581:1996 when wired as specified in BR943 Appendix C.

 **Over 10 million Mors Smitt relays in use in rail transport 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**  
 Graycar Business Park,  
 Burton on Trent, DE13 8EN, UK  
 Tel: +44 (0)1283 357 263  
 msu\_sales@wabtec.com

**Wabtec Netherlands B.V.**  
 Darwinstraat 10  
 6718 XR Ede, Netherlands  
 Tel: +31 (0)88 600 4500  
 wn\_salesupport@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 3171, Australia  
 Tel: +61 (0)3 8544 1200  
 sales.rms@wabtec.com

(c) Copyright 2023

All rights reserved. Nothing from this edition may be multiplied, or made public in any form or manner, either electronically, mechanically, by photocopying, recording, or in any manner, without prior written consent from Mors Smitt. This also applies to accompanying drawings and diagrams. Due to a policy of continuous development Mors Smitt reserves the right to alter the equipment specification and description outlined in this datasheet without prior notice and no part of this publication shall be deemed to be part of any contract for the equipment unless specifically referred to as an inclusion within such contract. Mors Smitt does not warrant that any of the information contained herein is complete, accurate, free from potential errors, or fit for any particular purpose. Mors Smitt does not accept any responsibility arising from any party's use of the information in this document.