

RP EA

I/O Interface for digital drive 635 and 637' series



Further descriptions, that relate to this document:

UL: 07-01-05-06



635 - Product -Manual

UL: 07-02-08-03



637 - Product -Manual

UL: 07-02-09-01



637+ - Product -Manual

UL: 07-02-10-01



637f - Product -Manual

UL: 07-05-07-02-01



Installation instructions RP EA5 für 635

UL: 07-05-07-02-02



Installation instructions RP EA5 for 637/637+/637f

UL: 10-06-03



Serial transfer protocol
EASY-serial – Product Description

UL: 10-06-05



BIAS Commands

©SSD Drives GmbH.

All rights reserved. No portion of this description may be produced or processed in any form without the consent of the company.

Changes are subject to change without notice.

SSD Drives has registered in part trademark protection and legal protection of designs.
The handing over of the descriptions may not be construed as the transfer of any rights.

Made in Germany, 2005

CONTENTS

page

The most important thing first	4
1 I/O interface for Digital Drive 635 and 637 / 637+ / 637f	5
2 Basic features of the I/O interface	5
3 637 / 637+ / 637f with I/O interface	6
3.1 Detail of the front view	6
3.2 Pin assignment X200	7
4 635 with I/O interface.....	8
4.1 Detail of the front view	8
4.2 Pin assignment COM2.....	9
5 EASYRIDER diagnosis.....	10
6 Example for programming the I/O's via BIAS.....	11
6.1 Command set.....	11
6.2 BIAS example	11
7 Technical data.....	11
8 Modification.....	12

The most important thing first

Thanks for your confidence choosing our product.

These operating instructions present themselves as an overview of the technical data and features.

Please read the operating instructions before operating the product.

If you have any questions, please contact your nearest SSD Drives representative. Improper application of the product in combination with dangerous voltage can lead to injuries.

In addition, damage can also occur to motors or other products.

Therefore please observe our safety precautions strictly.

Safety precautions

We assume that, as an expert, you are familiar with the relevant safety regulations, especially in accordance with VDE 0100, VDE 0113, VDE 0160, EN 50178, the accident prevention regulations of the employers liability insurance company and the DIN regulations and that you are able to use and apply them.

As well, relevant European Directives must be observed.

Depending on the kind of application, additional regulations e.g. UL, DIN are subject to be observed.

If our products are operated in connection with components from other manufacturers, their operating instructions are also subject to be observed strictly.

1 I/O interface for Digital Drive 635 and 637 / 637+ / 637f

The I/O interface (RP_EA) can be integrated as an option into the Digital Drives 635 and 637 / 637+ / 637f.

Possibilities:

- a) with 635:
 - 5 I / 2 O, connection via COM2
- b) with 637 / 637+ / 637f:
 - 5 I / 2 O, connection via COM2
 - or
 - 14 I / 10 O, connection via X200

The signals are normally used in the operating mode 5 (positioning control with BIAS execution).

The necessary commands are described in chapter 5 or in the BIAS command description UL 10.6.5.

The functions of the I/O interface are supported with the firmware release V 4.35 and the EASYRIDER version V 4.20.

2 Basic features of the I/O interface

productname: RP_EA

- Variants:
- 1 **RP_EA E**
board fully equipped printed
14 inputs, 10 outputs
 - 2 **RP_EA 5**
board semi equipped printed
5 inputs, 2 outputs

Variant 1 637 / 637+ / 637f:
connection via 26 pole SUB D connector X200

Variant 2 635 + 637 / 637+ / 637f:
connection via 9 pole SUB D connector COM2

expanded BIAS – commands if input xx...; output y = 0/1 etc.,

option detection from internal firmware,

separate signal diagnosis via EASYRIDER®

3 637 / 637+ / 637f with I/O interface

3.1 Detail of the front view

variant 2
 RP_EA 5
 9 pole SUB D socket
 5 inputs; 2 outputs



variant 1
 RP_EA E
 26 pole SUB D high
 density socket
 14 inputs; 10 outputs

637 / 637+ / 637f with I/O interface

3.2 Pin assignment X200

Digitale I/O standard
 SUBD26 high density socket
 (I = input; O = output)

PIN	Designation	Comment	Status
1	BIAS input 201	Standard	E
2	BIAS input 202	Standard	E
3	BIAS input 203	Standard	E
4	BIAS input 204	Standard	E
5	BIAS input 205	Standard	E
6	BIAS input 206	Standard	E
7	BIAS input 207	Standard	E
8	BIAS input 208	Standard	E
9	BIAS output 209	Standard	A
10	BIAS output 210	Standard	A
11	BIAS input 211	Standard	E
12	BIAS input 212	Standard	E
13	BIAS input 213	Standard	E
14	BIAS input 214	Standard	E
15	BIAS input 215	Standard	E
16	BIAS input 216	Standard	E
17	BIAS output 217	Standard	A
18	BIAS output 218	Standard	A
19	BIAS output 219	Standard	A
20	BIAS output 220	Standard	A
21	BIAS output 221	Standard	A
22	BIAS output 222	Standard	A
23	BIAS output 223	Standard	A
24	BIAS output 224	Standard	A
25	+24 V DC SPS	Ext. +24 V DC feed-in	Ub
26	0 V SPS	Ground reference0 V SPS	B

4 635 with I/O interface

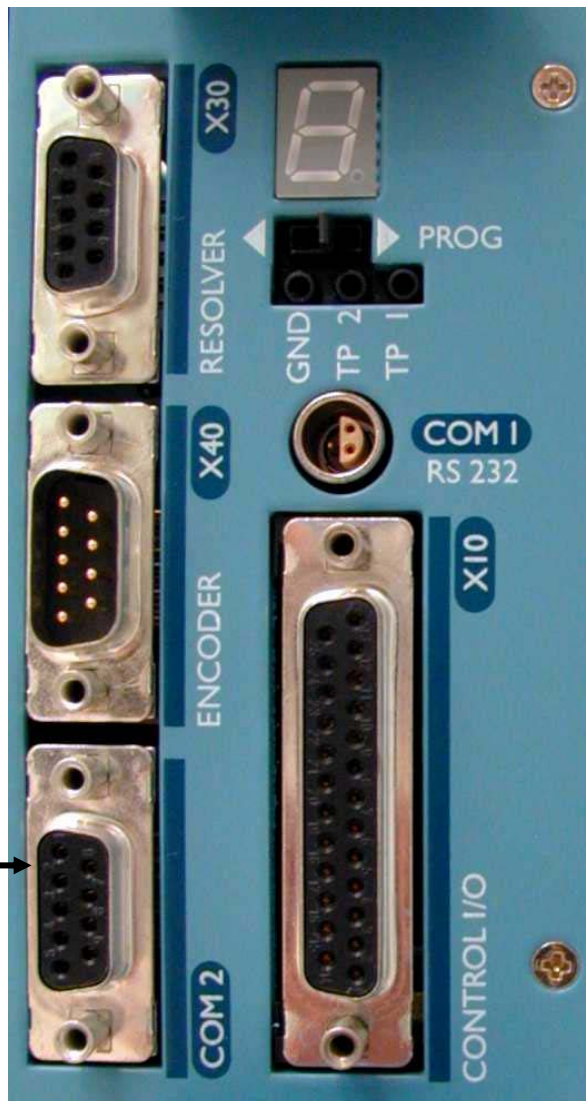
When the I/O board is plugged on the 635 the connection of the signals is possible via COM2.
It is possible to select 5 input and 2 output signals.

ATTENTION !!

A connection of a communication interface is not possible !

4.1 Detail of the front view

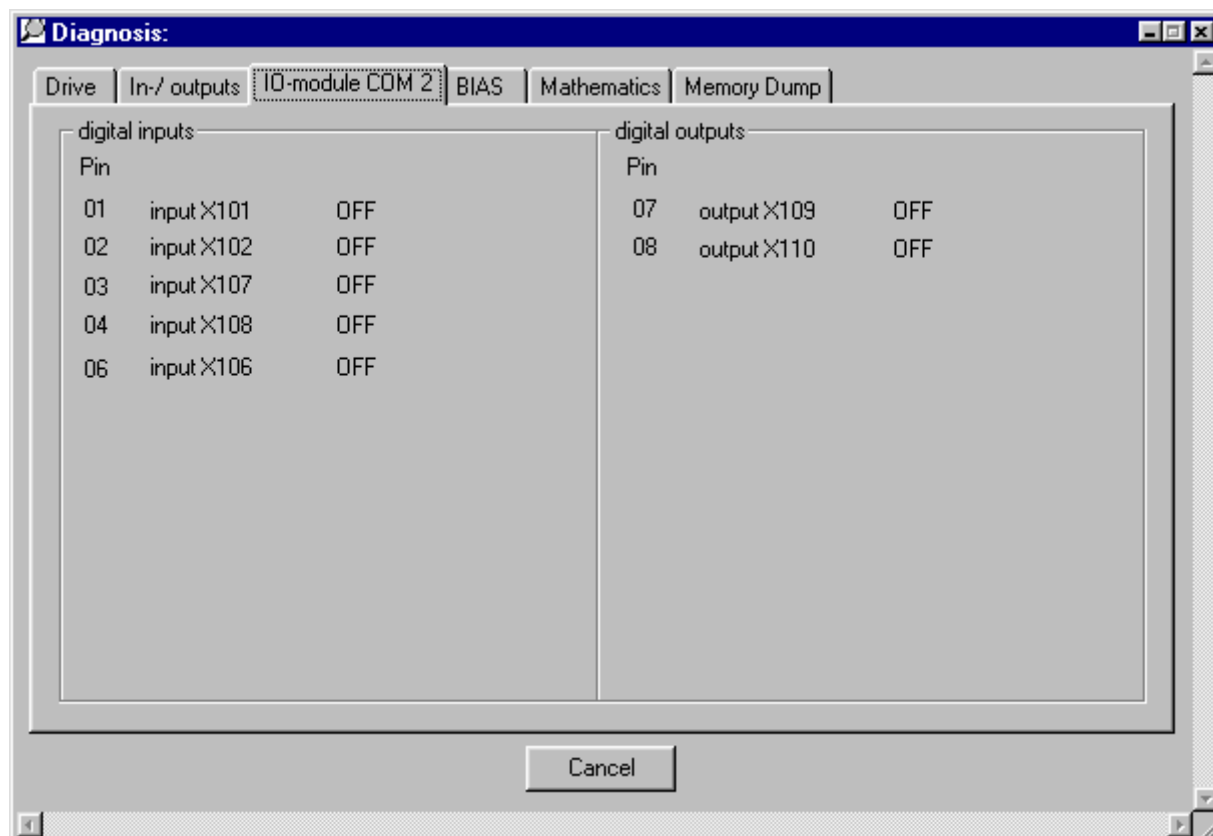
variant 2
RP_EA 5
9 pole SUB D socket
5 inputs; 2 outputs



635 with I/O interface

4.2 Pin assignment COM2

Digitale I/O standard
 SUB D 9 socket
 (I = input; O = output)



Notice !!

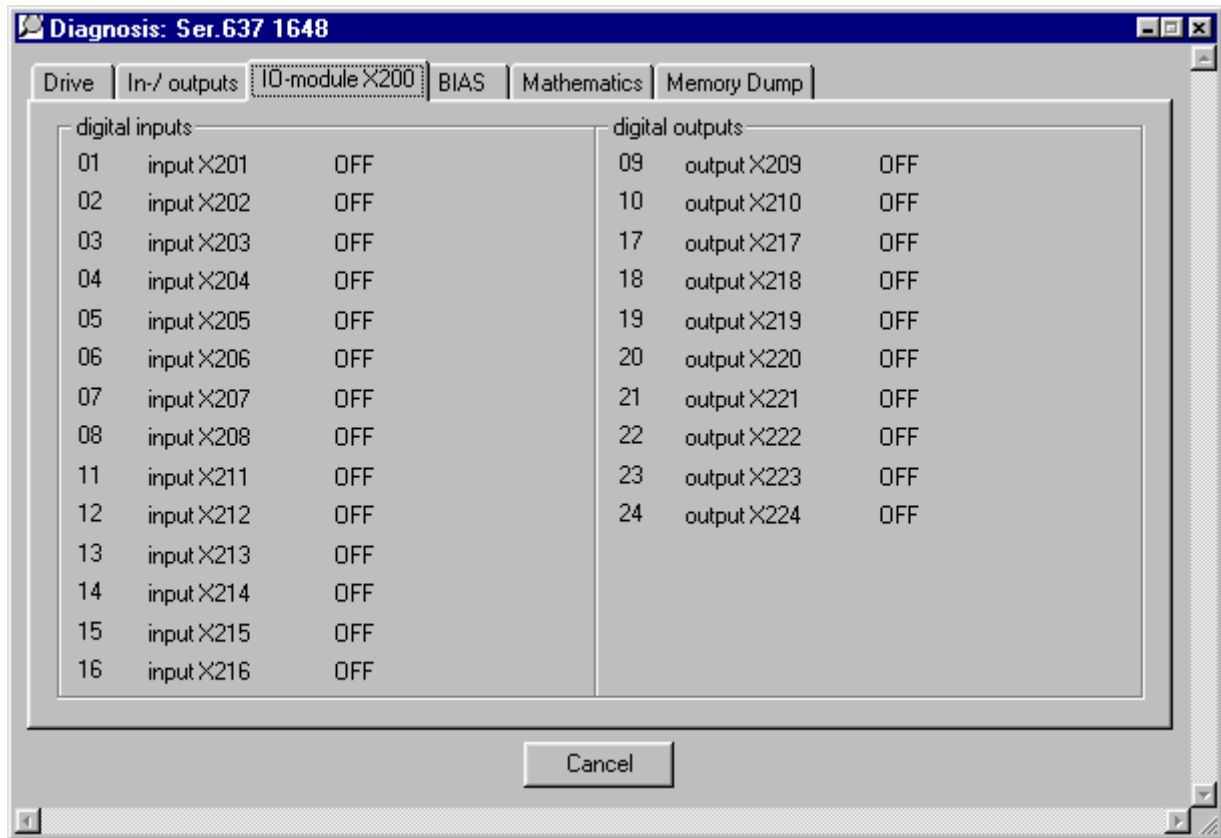
The inputs with the internal number 107 and 108 must be connected to the pins with number 3 and 4.

The outputs with the internal number 109 and 110 must be connected to the pins with number 7 and 8.

5 EASYRIDER diagnosis

The diagnosis of all signals the I/O module is possible via EASYRIDER[®] software

The expanded I/O diagnosis follows on an additional screen the I/O diagnosis from the X10 connector.



6 Example for programming the I/O's via BIAS

6.1 Command set

If input X ? Then jump Y
If output X ? Then jump Y
output X = 0/1
output X = flag Y
flag X = output Y
flag X = input Y

The definition of the input and output numbers are described in the chapter 3.2 and 4.2 in the column designation.

6.2 BIAS example

Explanation:

If the input 201 (X200 Pin 1) get 24V (logical 1) the output 217 (X200 pin 17) should be set (24V; logical 1).

PROG_START:	
0	if input 201 == 1 then jump SET
1	output 217 = 0
2	jump PROG_START
SET:	
3	output 217 = 1
4	jump PROG_START

7 Technical data

additional galvanic separation from power and control circuit	
nominal voltage of the in- and outputs	24 V DC
signal outputs via OPTO coupler	$U_{max} = 45V$ DC; $I = 0..120$ mA; short circuit proof, resistive load
signal outputs via OPTO coupler	L = 0...7 V DC or open H = 15...30 V DC I_{in} with 24V DC: 8 mA
reaction time of the inputs	> 2 ms

8 Modification

Version	Modification	Chapter	Date	Name	Comment
V02.24SA99	Text modification	2	14.06.1999	SA / ST	
V03.25SA00	Text modification		20.06.2000	WO	
V04.43EH00	title foto, model, further descriptions		27.10.2000	WO	
V0501	example corrected Separation German / English	6.2 all	11.06.2001	SA Dreilich	
V0605	SSD Drives		11.01.2005	N. Dreilich	Logos

AUSTRALIA
Eurotherm Pty Ltd
Unit 1
20-22 Foundry Road
Seven Hills
New South Wales 2147
Tel: +61 2 9838 0099
Fax: +61 2 9838 9288

CANADA
SSD Drives Inc
880 Laurentian Drive
Burlington
Ontario
Canada, L7N 3V6
Tel: +1 905 333-7787
Fax: +1 905 632-0107

CHINA
Eurotherm Pty Ltd
Apt. 1805, 8 Building Hua Wei Li
Chao Yang District,
Beijing 100021
Tel: +86 10 87785520
Fax: +86 10 87790272

DENEMARK
SSD Drives
Enghavevej 11
DK-7100 Vejle
Tel: +45 70 201311
Fax: +45 70 201312

FRANCE
SSD Drives SAS
15 Avenue de Norvège
Villebon sur Yvette
91953 Courtaboeuf Cedex / Paris
Tel: +33 1 69 185151
Fax: +33 1 69 185159

GERMANY
SSD DRIVES GmbH
Von-Humboldt-Straße 10
64646 Heppenheim
Tel: +49 6252 7982-00
Fax: +49 6252 7982-05

HONG KONG
Eurotherm Ltd
Unit D
18/F Gee Chang Hong Centre
65 Wong Chuk Hang Road
Aberdeen
Tel: +852 2873 3826
Fax: +852 2870 0148

INDIA
Eurotherm DEL India Ltd
152, Developed Plots Estate
Perungudi
Chennai 600 096, India
Tel: +91 44 2496 1129
Fax: +91 44 2496 1831

IRELAND
SSD Drives
2004/4 Orchard Ave
Citywest Business Park
Naas Rd, Dublin 24
Tel: +353 1 4691800
Fax: +353 1 4691300

ITALY
SSD Drives SpA
Via Gran Sasso 9
20030 Lentate Sul Seveso
Milano
Tel: +39 0362 557308
Fax: +39 0362 557312

JAPAN
PTI Japan Ltd
7F, Yurakucho Building
10-1, Yuakucho 1-Chome
Chiyoda-ku, Tokyo 100-0006
Tel: +81 3 32132111
Fax: +81 3 32131900

KOREA
SSD Korea Co., Ltd.
1308, Daeryung Techno Town
8th Bldg., 481-11 Gasan-Dong,
Geumcheon-Gu,
Seoul 153-803
Tel: +82 2 2163 6677
Fax: +82 2 2163 8982

NETHERLANDS
Eurotherm BV
Genielaan 4
2404CH
Alphen aan den Rijn
Tel: +31 172 411 752
Fax: +31 172 417 260

Poland
OBR-USN
ul. Batorego 107
PL 87-100 Torun
Tel: +48 56 62340-21
Fax: +48 56 62344-25

Romania
Servosisteme SRL
Sibiu 17
061535 Bukarest
Tel: +40 723348999
Fax: +40 214131290

SCHWEDEN
SSD Drives AB
Montörögatan 7
S-30260 Halmstad
Tel: +46 35 177300
Fax: +46 35 108407

SPAN
Eurotherm Espana S.A.
Pol. Ind. Alcobendas
C/ La Granja, 74
28108 Madrid
Tel: +34 91 661 60 01
Fax: +34 91 661 90 93

SWITZERLAND
Indur Antriebstechnik AG
Margarethenstraße 87
CH 4008 Basel
Tel: +41 61 27929-00
Fax: +41 61 27929-10

United Kingdom
SSD Drives Ltd
New Courtwick Lane
Littlehampton
West Sussex BN17 7RZ
Tel: +44 1903 737000
Fax: +44 1903 737100

U.S.A
SSD Drives Inc.
9225 Forsyth Park Drive
Charlotte
North Carolina 28273-3884
Tel: +1 704 588 3246
Fax: +1 704 588 3249

Local availability and service support also in:

Argentina · Austria · Bangladesh · Brazil · Chile · Colombia · Costa Rica · Cyprus · Czech Republic · Ecuador · Greece · Hungary · Indonesia · Iceland · Israel · Kuwait · Lithuania · Malaysia · Marocco · Mexico · New Zealand · Nigeria · Peru · Philippines · Portugal · Saudi Arabia · Singapore · Slovenia · Sri Lanka · South Africa · Taiwan · Thailand · Turkey · United Arab Emirates · Vietnam

SSD Drives GmbH

Head Office

Von-Humboldt-Straße 10, D-64646 Heppenheim
Telefon +49 (0)6252 7982-00, Fax +49 (0)6252 7982-05

Plant Servosystems

Im Sand 14, D-76669 Bad Schönborn
Telefon +49 (0)7253 9404-0, Fax +49 (0)7253 9404-99

www.SSDdrives.com

ssd@ssddrives.de