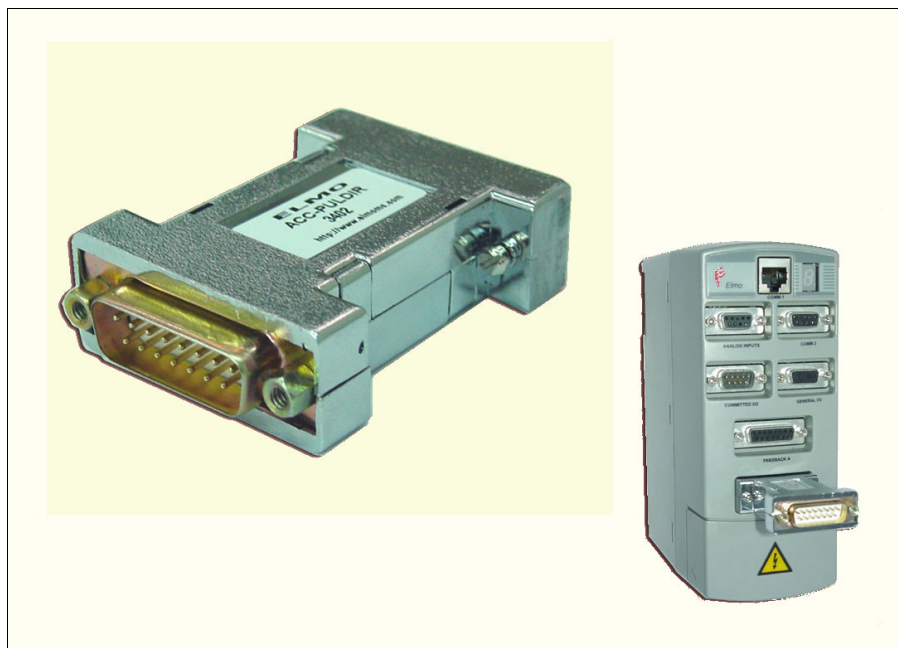

Pulse-and-Direction Single-to-Differential Outputs Converter

User Guide



November 2002

Important Notice

This guide is delivered subject to the following conditions and restrictions:

- This guide contains proprietary information belonging to Elmo Motion Control Ltd. Such information is supplied solely for the purpose of assisting users of the Pulse and Direction converter, in conjunction with the Elmo Saxophone, Mini-Saxophone and Clarinet servo drives.
- The text and graphics included in this manual are for the purpose of illustration and reference only. The specifications on which they are based are subject to change without notice.
- Information in this document is subject to change without notice.

Doc. no. P&LUGEN1102
Copyright © 2002
Elmo Motion Control Ltd.
All rights reserved.

Product Catalog Number:	ACC-PULDIR
--------------------------------	-------------------

Revision History:

Document version 1.0: November 2002

Elmo Motion Control Ltd.

64 Gisin St., P.O. Box 463
Petach Tikva
49103
Israel

Tel: +972 3 929-2300
Fax: +972 3 929-2322

Elmo Motion Control Inc.

900H River St.
Kennedy Industrial Park
Windsor, CT 06095
USA

Tel: +1 860 683-0095
Fax: +1 860 683-0336

Elmo Motion Control GmbH

Steinbeisstrasse 41
D-78056
Villingen-Schwenningen
Germany

Tel: +49 07720 8577-60
Fax: +49 07720 8577-70

www.elmomc.com



Contents

- 1. Introduction..... 1
- 2. Pinout 2
 - 2.1 Female D-type Connector 2
 - 2.2 Male D-type Connector 3
- 3. Installation 4
- 4. Technical Specifications 5

1. Introduction

The Elmo Pulse and Direction converter complements the capabilities of Elmo digital servo drives, enabling them to operate in conjunction with controllers using single-ended outputs for pulse and direction, in addition to standard differential outputs.

The Pulse and Direction converter receives the single-ended signals from an external source — usually the position controller — and converts them to differential signals so that the drives function exactly as they do with controllers using differential outputs for pulse and direction.

The converter connects directly into the appropriate Feedback connector of the Elmo drive using the 15-pin female connector. Connecting the converter is easy: with the Saxophone and Mini-Saxophone drives, you simply plug it into the Feedback B connector; with the Clarinet drive, you add a connector cable.



Pulse-and-Direction Converter, Mounted

2. Pinout

The Pulse and Direction converter contains two connectors:

- A 15-pin female D-type connector
- A 15-pin male D-type connector

2.1 Female D-type Connector

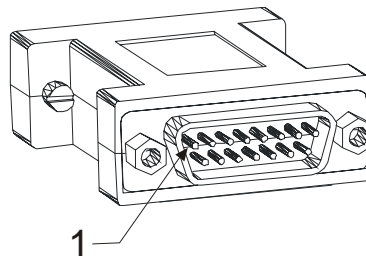
The 15-pin female D-type connector connects directly to the Feedback B connector of the Saxophone or Mini-Saxophone drive, as follows:

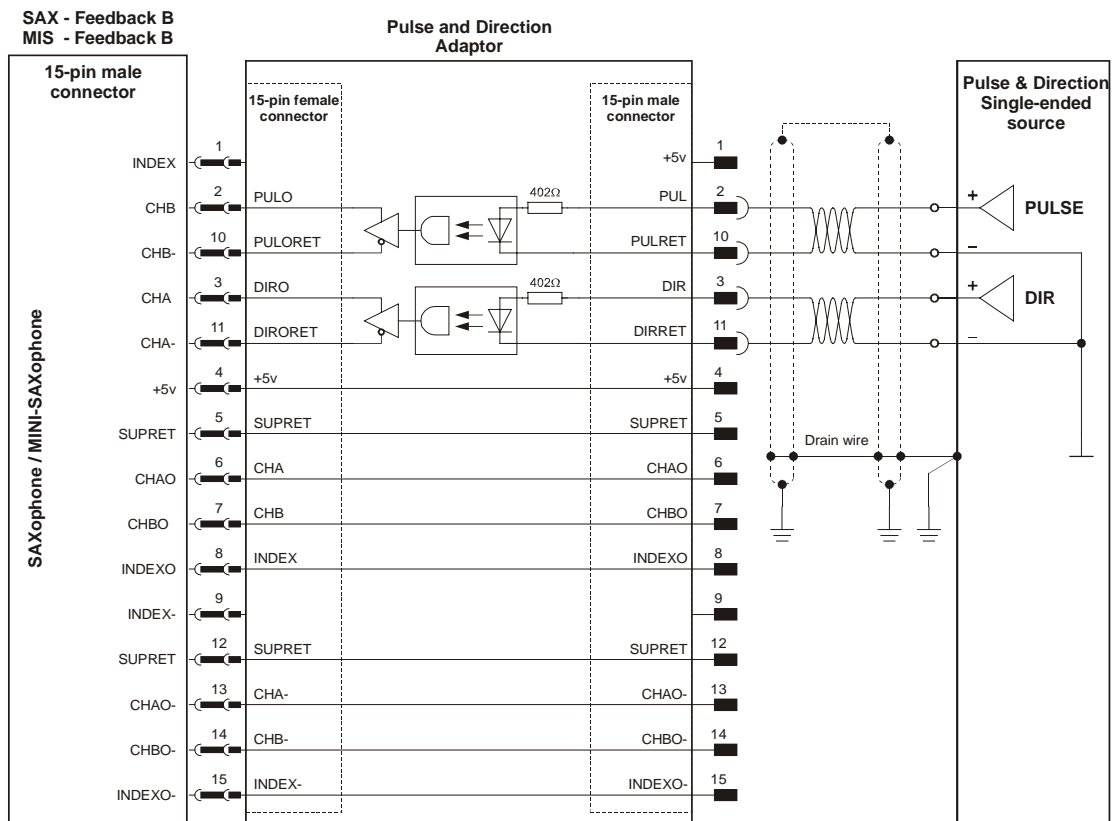
Pin	Signal	Function
1		
2	PULO	Pulse output
3	DIRO	Direction output
4	+5V	Input supply voltage
5	SUPRET	Input supply return
6	CHA	Channel A input, coming directly from Saxophone/Mini-Saxophone
7	CHB	Channel B input, coming directly from Saxophone/Mini-Saxophone
8	INDEX	Index input, coming directly from Saxophone/Mini-Saxophone
9		
10	PULORET	Pulse output return
11	DIRORET	Direction output return
12	SUPRET	Supply return
13	CHA-	Channel A complement input, coming directly from Saxophone/Mini-Saxophone
14	CHB-	Channel B complement input, coming directly from Saxophone/Mini-Saxophone
15	INDEX-	Index complement input, coming directly from Saxophone/Mini-Saxophone

2.2 Male D-type Connector

The 15-pin male D-type connector is used for user input, as follows:

Pin	Signal	Function
1	+5V	Output voltage
2	PUL	Pulse input
3	DIR	Direction input
4	+5V	Output voltage
5	SUPRET	+5V return
6	CHAO	Channel A output, coming directly from Saxophone/Mini-Saxophone
7	CHBO	Channel B output, coming directly from Saxophone/Mini-Saxophone
8	INDEXO	Index output, coming directly from Saxophone/Mini-Saxophone
9		
10	PULRET	Pulse input return
11	DIRRET	Direction input return
12	SUPRET	+5V return
13	CHAO-	Channel A complement output, coming directly from Saxophone/Mini-Saxophone
14	CHBO-	Channel B complement output, coming directly from Saxophone/Mini-Saxophone
15	INDEXO-	Index complement output, coming directly from Saxophone/Mini-Saxophone





Pulse and Direction Converter Connection Diagram

3. Installation

Connect the Pulse and Direction converter according to the following table:

Elmo Drive	Connector	Cable	Input Connector
Saxophone	Feedback B	None	15-pin male D-type
Mini-Saxophone	Feedback B	None	15-pin male D-type
Clarinet	Auxiliary encoder	Required	RJ-45 type

On the Saxophone and Mini-Saxophone drives, the Feedback B connector pins used for other functions are connected with full compatibility to the input connector of the Pulse and Direction converter so that the pinout and the connector type are identical to the Feedback B connector of the servo drive.

4. Technical Specifications

Pulse and direction input interface:

Feature	Details
Input type	Optically-isolated
Frequency range	0 - 2 MHz
Input current	$I_{in} = \frac{V_{in} - 1.5V}{511\Omega}$
Input voltage	$5\text{ V} \leq V_{in} \leq 9\text{ V}$
Weight	30 g
Dimensions (W x H x L)	41.5 x 16.0 x 62.0 mm (1.63 x 0.63 x 2.44 in)

