

INTRODUCING POLYSPEDE DIGITAL DC DRIVES



**POLYSPEDE**

## The Polyspede digital DC drive is probably the most powerful on the market today

With an extensive range of standard software blocks, it can take control of the most demanding motion tasks. All models include 40 character alpha-numeric back-lit display, full set of center winding blocks and a field weakener for extended speed range. A high quality product from a world class company. UL, cUL and CE approved.

Available in both 2Q and 4Q versions, the range comprises 3 very compact chassis sizes with models rated from 5 to 265Kw.

INCLUDES FREE SPEDESTER CONFIGURATION AND MONITORING SOFTWARE

### Key Features

Friendly-easy to use menu structure with English language parameter names.

Extremely flexible block diagram, including unique "Configuration Checker," detects shorting of user-programmed block diagram output connections.

Free Spevester drive configuration and monitoring software.

Failsafe automatic "Revert to AVF" on speed feedback failure.

Ultra compact sizes offering significant panel space savings over other manufacturers.

Programming menu is designed for rapid travel to desired parameter using ergonomically designed keys.

Five feedback transducer options as standard.

Non volatile trip alarm memory, even after power-down.

Real language parameter description eliminates need for look up tables.

UL, cUL and CE approved.

Built in "Oscilloscope" output for full parameter monitoring.

Three fully independent, user-programmable drive configurations.

Extensive, multi-function programmable I/O, with over 36 digital & analogue input / output combinations.

Full suite of center winding macros included.

Built in system application blocks with description connection points.

Electronic regenerative stopping facility on most 2Q models.

In-depth fault monitoring and comprehensive system alarms.

Serial communications to allow off site programming and remote diagnostics.

Diagnostic facility available from on-board display & "in-built meter".

On-board fully controlled field with five operating modes.

Easy to use product manual with display graphics and block diagrams

Full suite of built in encoder functions as standard.

## SPEDESTER DRIVE



LARGE 40 CHARACTER BACKLIT ALPHANUMERIC LCD DISPLAY

FRIENDLY EASY TO USE MENU STRUCTURE WITH ENGLISH LANGUAGE PARAMETER NAMES

5 - 75 HP

100 - 200 HP

250 - 350 HP

### Rating & dimensions

SPEDESTER 2 QUADRANT	SPEDESTER 4 QUADRANT	HP @460V	kW @460V	Armature Current DC Amps	Field Current DC Amps	Dimension (HxWxD) Inches
D2Q1-50	D4Q1-50	5	3.7	9	8	11.4 x 8.5 x 6.9
D2Q1-100	D4Q1-100	10	7.5	18	8	11.4 x 8.5 x 6.9
D2Q1-150	D4Q1-150	15	11.0	24	8	11.4 x 8.5 x 6.9
D2Q1-200	D4Q1-200	20	15.0	36	8	11.4 x 8.5 x 6.9
D2Q1-250	D4Q1-250	25	20.0	44	8	11.4 x 8.5 x 6.9
D2Q1-300	D4Q1-300	30	22.5	51	8	11.4 x 8.5 x 6.9
D2Q1-400	D4Q1-400	40	30.0	72	8	11.4 x 8.5 x 6.9
D2Q1-500	D4Q1-500	50	37.0	86	8	11.4 x 8.5 x 6.9
D2Q1-600	D4Q1-600	60	45.0	99	8	11.4 x 8.5 x 6.9
D2Q1-750	D4Q1-750	75	55.0	123	8	11.4 x 8.5 x 6.9
D2Q1-1000	D4Q1-1000	100	75.0	155	16	16.1 x 8.5 x 8.6
D2Q1-1250	D4Q1-1250	125	90.0	205	16	16.1 x 8.5 x 8.6
D2Q1-1500	D4Q1-1500	150	110.0	270	16	16.1 x 8.5 x 8.6
D2Q1-1750	D4Q1-1750	175	132.0	300	16	16.1 x 8.5 x 8.6
D2Q1-2000	D4Q1-2000	200	150.0	330	32	19.9 x 8.5 x 11.6
D2Q1-2500	D4Q1-2500	250	185.0	430	32	19.9 x 8.5 x 11.6
D2Q1-3000	D4Q1-3000	300	225.0	530	32	19.9 x 8.5 x 11.6
D2Q1-3500	N / A	350	265.0	630	32	19.9 x 8.5 x 11.6

This is a highly intuitive 'windows' based software package which requires no previous knowledge of any programming language.

The package can be used in 2 operating modes:

Off-line without a drive connected, the user can create recipes of drive parameters and block connections

On-line with a drive connected, the SPEDESTER can also be used to monitor and adjust the drive parameters.

The PC running the SPEDESTER software is connected to the drive via the PC's standard serial port. The package is designed for ease of use and provides a clear, defined and understandable method for accessing all levels of the drives extensive built-in functionality.

This makes complete system configurations very straightforward and quick.

There are 3 levels of recipe creation and functionality available in SPEDESTER to suit all requirements. They are:

Total recipe (top level) - used to manipulate the entire range of parameters.

Bar sub-menus (2nd level) - used to manipulate each main sub-set of parameters.

Block pages (lowest level) - used to manipulate parameters of individual blocks within the drive. The recipes and sections of recipes may be cut and pasted or printed out.

## Key Features

MINIMISES DRIVE SET-UP AND COMMISSIONING TIME

ALLOWS ON-LINE AND OFF-LINE DRIVE CONFIGURATION

EASY TO USE 'WINDOWS' BASED SOFTWARE PACKAGE

CONFIGURES DRIVE APPLICATION, BLOCK DIAGRAM AND SET-UP PARAMETERS

ALLOWS REAL TIME PARAMETER DIAGNOSTICS AND MONITORING

ALLOWS "COPY AND PASTE" OF ENTIRE RECIPES OR SECTIONS OF RECIPES TO IMPROVE SPEED AND EASE OF DRIVE SETUP

CUSTOM PAGE ALLOWS USERS TO SELECT UP TO 16 PARAMETERS DISPLAYED IN BAR GRAPH OR PANEL METER FORMAT

TILE AND ZOOM FACILITY ALLOWS USER TO VIEW AND ARRANGE ANY NUMBER OF SCREENS SIMULTANEOUSLY

UNIQUE "CONFIGURATION CHECKER" AUTOMATICALLY SCANS FOR USER PROGRAMMED CONNECTION FAULTS AND HIGHLIGHTS THE CONFLICTS

THE LAYOUT OF THE DIAGRAM PAGES AND SOFT BUTTONS MIMIC THE DRIVES MENU STRUCTURE

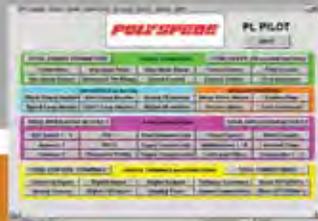
DIAGNOSTIC MONITORING IN ENGINEERING UNITS (VOLTS, AMPS, Kw, RPM, Hz) AND PERCENTAGES FOR ALL TERMINALS AND BLOCK OUTPUTS

EXTENSIVE COLOR DYNAMICS TO ASSIST IN THE DETECTION OF IMPORTANT CONDITIONS

BUILT-IN INTERACTIVE HELP PAGES

INTUITIVE TO USE

# SPEDESTER CONFIGURATION & DIAGNOSTIC SOFTWARE



**THE BAR SUB-MENUS** 2ND LEVEL shows the 4 main menu bars on the Spedeester entry page. These are:

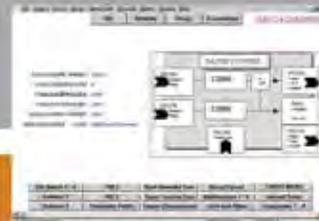
Change parameters

Diagnostics and ancillary functions

Application blocks

Control terminals

Each bar has buttons that allow access to a drive block page.



**THE BLOCK PAGES** LOWEST LEVEL

Each block has its own page which details its default values (shown in blue text) and any altered values (shown in black text) with its own block diagram. In most cases this alleviates the need for a hard copy of the technical manual - an excellent plus point when commissioning on site!



Diagnostic and monitoring in engineering units (volts, amps, Kilowatts, rpm, Hz) and percentages for all terminals and block diagram outputs can be shown in bar graph or panel meter format.

The software is included free of charge on a CDROM with every digital drive. It makes interconnecting the drive's application blocks a simple task and allows the user to tailor the demands of the process or application. These abilities further strengthen Polyspede's commitment to provide the user with cost effective and easy to use DC drive products.

# Specification

## RATINGS

### POWER CONFIGURATION

PLX Four Quadrant Regenerative  
PL Two Quadrant Non-Regenerative  
(some PL models have electronic  
regenerative stopping facility)

Fully controlled variable field supply

### ARMATURE VOLTAGE

$V_{\text{armature}} = V_{\text{ac}} \times 1.2$

### ARMATURE CURRENT RATINGS (A<sub>dc</sub>)

12, 24, 36, 51, 72, 99, 123, 155,  
205, 270, 330, 430, 530, 630  
Overload 150% for 25 seconds

### FIELD CURRENT

8A (12-123A ratings)  
16A (155-330A ratings)  
32A (430-630A ratings)

### FIELD VOLTAGE

$V_{\text{field}} = 0 \text{ to } 0.9 \times \text{Auxiliary}$   
AC Supply

### AC SUPPLY VOLTAGE (VAC)

Main 3 phase 50-60Hz :-  
12 to 480Vac +/- 10%  
for armature power  
Auxiliary 3 phase 50-60Hz :-  
100 to 480Vac +/- 10%  
for field power  
Control 1 phase 50-60Hz :-  
110 to 240Vac +/- 10%  
for control power

## PROTECTION

Interline device networks  
High energy MOV's  
Instantaneous over-current  
Field failure & over-current  
Motor over-temperature  
Thyristor stack over-temperature  
Mains supply phase loss  
Mains synchronization loss  
Armature over-volts  
Speed feedback failure  
Stall protection  
Standstill logic  
Thyristor "trigger" failure  
Digital output short circuit



## STANDARD SOFTWARE FUNCTIONS

Full suite of center winding macros  
Motorized pot simulator with memory  
2x PID's (undedicated)  
2x Summers (undedicated)  
2x Filters (undedicated)  
Delay timer  
Current Profiling  
Spindle Orientation  
Jog/Crawl functions  
Dual motor swap  
Latch  
Linear or S ramp  
Slack take up  
Batch counter  
Auto self-tune current loop  
3 user programmable drive  
configurations

## ALARM STATUS

First fault latched and  
automatically displayed.  
Fault automatically saved at  
power off.

## FIELD CONFIGURATIONS

Fixed current  
Fixed voltage  
Field weakening  
Delayed quenching  
Standby field value  
Field economy

## ENVIRONMENT

Ambient Operating Temperature  
0-50C (all ratings)  
-25 to +55C storage

## STEADY STATE ACCURACY

0.01% Encoder feedback  
with digital reference.  
0.1% Analogue tachogenerator  
feedback.  
2% Armature voltage feedback.  
0.01% Encoder + tacho encoder  
+ AVF or encoder-only feedback.  
Maximum encoder frequency  
100KHz

## INPUTS/OUTPUTS

**ANALOGUE INPUTS**  
(8 Total - resolution 5mV+sign)  
All configurable  
All have programmable thresholds  
and 4 voltage ranges  
+/- 5/10/20/30V  
All inputs are over-voltage protected  
(can also be utilized as digital i/p's)

**ANALOGUE OUTPUTS**  
(4 Total - resolution 2.5mV+sign)  
1 armature current output  
3 configurable  
All outputs are short circuit protected

**DIGITAL INPUTS**  
(17 Total)  
All configurable

**DIGITAL OUTPUTS**  
(7 Total - max 32V - 350mA total)  
Short circuit protected  
Over-temperature and  
over-voltage protected  
All configurable

## MONITORING

All analogue input voltages  
All digital input states  
All analogue output voltages  
All digital output states  
Tachogenerator voltage  
Motor armature volts  
Output power  
AC supply volts

## STANDARDS

CE marked to EN50178  
(low voltage directive)

EN50082-2 : 1995  
immunity industrial environment

EN50082-1 : 1997  
immunity residential  
commercial and light industry

EN50081-2 : 1993  
emissions industrial environment  
(EN55011 Class A)

EN50081-1 : 1992  
emissions industrial environment  
(EN55022 Class B)

UL and cUL listed



# POLYSPEDE

## Reliability fitted as standard

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