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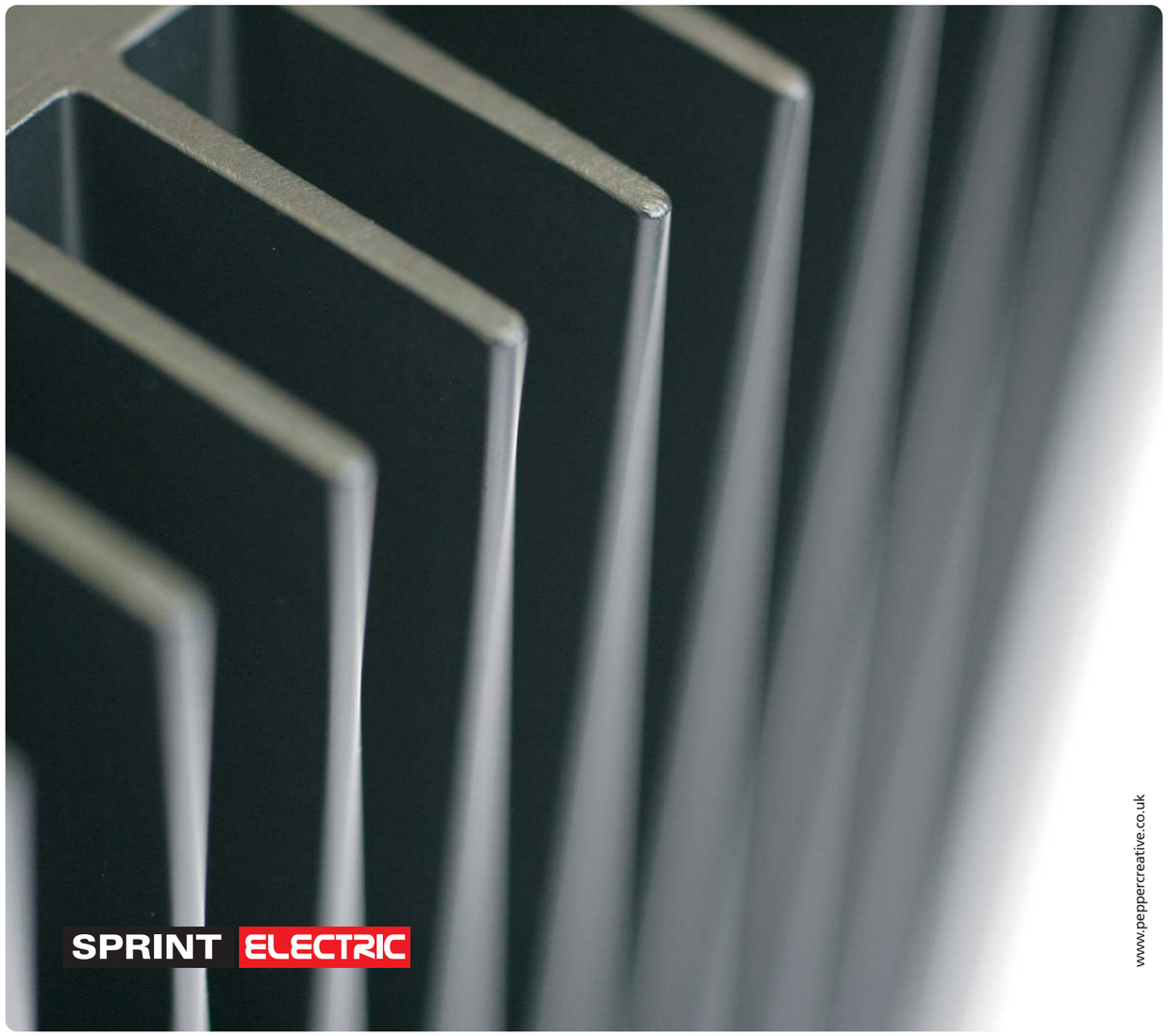

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World class in design | World beating in function | 25 years of industrial motor control

DC MOTOR CONTROL TECHNOLOGY
PRODUCT CATALOGUE

SINGLE PHASE DC DRIVES

THE QUEEN'S AWARDS
FOR ENTERPRISE:
INTERNATIONAL TRADE
2009

SPRINT ELECTRIC

Contents:

DC Motor Control Technology:

Increase your productivity, save energy and reduce downtime.

With an extensive range of DC motor control products, you will find an answer to your industrial automation questions.

Your Industry - Our Experience.

We've used our renowned industrial automation experience to design a range of DC motor controllers which provide you with solutions to the most demanding motor control applications.

It's now easier than ever to design new DC motor control systems or improve the performance of an existing application by retrofitting with the latest DC technology.

Save with Compact Designs and Ex-Stock Delivery.

You can save cabinet space in new control systems, or easily upgrade an existing DC motor application. Compact design comes as standard.

Reduce your downtime by relying on our ex-stock delivery. With a global network of partners and all products built for stock, you can quickly get your business moving again.

Three Phase Products.

We also manufacture three phase DC motor controllers. Please see our Three Phase Product Catalogue for details.

DIN RAIL MOUNTING OPTIONS

340
680
1220
Page 05

340i
680i
1220i
Page 06-07

340XRi
680XRi
1220XRi
Page 08-09

PRODUCT NAME

340

340 0.55KW / 0.75HP
680 0.75KW / 1.0HP
1220 1.8KW / 2.0HP

DESCRIPTION

Ultra compact DC motor control. Non isolated.

Make upgrading your existing control panel easier. Save space in new DC single direction motor control systems. The ultra compact DIN rail mounting package lets you install quickly.

Three options are available for controlling DC motors up to 12.2 Amps. You can use this versatile range of non-isolated controllers for permanent magnet, shunt wound motors or universal motors.

To make your installation quick and simple, all 340, 680, and 1220 series controllers have easy to access drive adjustments, plug-on screw terminals and a small footprint from just 35mm x 105mm.

MODEL COMPARISON

MODEL	AC SUPPLY RANGE	TYPICAL ARMATURE VOLTAGE	MAX CONTINUOUS ARMATURE CURRENT	NOMINAL POWER
340	100 to 130V	90V	3.4A	0.25KW (0.35HP)
	200 to 264V	180V	3.4A	0.55KW (0.75HP)
680	100 to 130V	90V	6.8A	0.55KW (0.75HP)
	200 to 264V	180V	6.8A	0.75KW (1.0HP)
1220	100 to 130V	90V	12.2A	0.75KW (1.0HP)
	200 to 264V	180V	12.2A	1.8KW (2.0HP)

DIMENSIONS 340

H	105 mm
W	35 mm
D	120 mm

680 / 1220

H	105 mm
W	45 mm
D	120 mm

See parts list at back for low voltage supply options and fuses.
Refer to features chart for further details or download product manual for full specification.

AT A GLANCE
340, 680, 1220 series

340 controller for DC motors rated up to 3.4 Amps (0.55KW/0.75HP)

680 controller for DC motors rated up to 6.8 Amps (0.75KW/1HP)

1220 controller for DC motors rated up to 12.2 Amps (1.8KW/2HP)

DIN rail mounting

Easy to access drive adjustments

Plug-on screw terminals

Small footprint

Technical highlights:

Switch selectable Tach or Armature voltage feedback

Adjustable IR compensation for improved AVF speed regulation

Selectable dual voltage AC supply

Aux speed trim input available in AVF mode

User adjustable:

Ramp

Max motor speed

Min motor speed

IR comp

Max motor current

AT A GLANCE
340i, 680i, 1220i series

Fully isolated control electronics

340i controller for DC motors rated up to 3.4 Amps (0.55KW/0.75HP)

680i controller for DC motors rated up to 6.8 Amps (0.75KW/1HP)

1220i controller for DC motors rated up to 12.2 Amps (1.8KW/2HP)

DIN rail mounting

Easy to access drive adjustments

Plug-on screw terminals

Small footprint

UL, CuL, CE approved

PRODUCT NAME

340i

340i 0.55KW / 0.75HP
680i 0.75KW / 1.0HP
1220i 1.8KW / 2.0HP

DESCRIPTION

Fully isolated DC motor control with compact design

Improving or upgrading your single direction DC motor control system is easier with this series of fully-isolated controllers. The ultra compact DIN rail mounting package lets you quickly integrate the 340i, 680i and 1220i series with your existing motor control equipment.

Three options are available for controlling DC motors up to 12.2 Amps. You can use this versatile series of fully-isolated controllers for permanent magnet or shunt wound motors.

To make your installation quick and simple, all 340i, 680i and 1220i series controllers have easy to access drive adjustments, plug-on screw terminals and a small footprint from just 60mm x 105mm.

See parts list at back for low voltage supply options and fuses.

PRODUCT NAME

340i

340i 0.55KW / 0.75HP
680i 0.75KW / 1.0HP
1220i 1.8KW / 2.0HP

Technical highlights:

340i, 680i, 1220i series
Switch selectable Tach or Armature voltage feedback
Adjustable IR compensation for improved AVF
Speed or torque control
Selectable dual voltage AC supply
Aux speed input
150% overload with stall protection

User adjustable:

Max motor speed
Min motor speed
Up ramp
Down ramp
Stability
Imax
IR comp
AVF/Tach switch
Speed range switch
AC voltage selector
Signal level comparator

Signal terminals:

+10V ref	Level output
Min speed	Level input
Ramped input +	Overload output
Output +/-	Trip output
Common	Ramp output
Input +/-	Demand output
Pushbutton +	Speed output
Pushbutton -	Current output
Run input	Speed input
Common	Torque input
Tach input	

MODEL COMPARISON

MODEL	AC SUPPLY RANGE	TYPICAL ARMATURE VOLTAGE	MAX CONTINUOUS ARMATURE CURRENT	NOMINAL POWER
340i	100 to 130V	90V	3.4A	0.25KW (0.35HP)
	200 to 264V	180V	3.4A	0.55KW (0.75HP)
680i	100 to 130V	90V	6.8A	0.55KW (0.75HP)
	200 to 264V	180V	6.8A	0.75KW (1.0HP)
1220i	100 to 130V	90V	12.2A	0.75KW (1.0HP)
	200 to 264V	180V	12.2A	1.8KW (2.0HP)

DIMENSIONS 340i

H	105 mm
W	60 mm
D	120 mm

680i / 1220i

H	105 mm
W	70 mm
D	120 mm

Refer to features chart for further details or download product manual for full specification.

AT A GLANCE

340XRi, 680XRi, 1220XRi series

4 Quadrant regenerative DC motor controller

Fully isolated control electronics

340XRi controller for DC motors rated up to 3.4 Amps (0.55KW/0.75HP)

680XRi controller for DC motors rated up to 6.8 Amps (0.75KW/1HP)

1220XRi controller for DC motors rated up to 12.2 Amps (1.8KW/2HP)

DIN rail mounting

Easy to access drive adjustments

Plug-on screw terminals

Small footprint

UL, CuL, CE approved

PRODUCT NAME

340XRi

340XRi 0.55KW / 0.75HP
680XRi 0.75KW / 1.0HP
1220XRi 1.8KW / 2.0HP

DESCRIPTION

Regenerative DC motor control with compact Design. Fully isolated control electronics.

This 4 Quadrant regenerative DC motor controller gives a fast controlled response over the full forward/reverse speed range for motoring and braking.

Improve your energy efficiency by regenerating energy into the mains supply whilst under braking. The energy invested accelerating the load mass is recovered when braking. There is no dissipation of energy in wasteful braking resistors.

The compact DIN rail mounting package uses less panel space so you can save space as well as energy.

Three options are available for controlling DC motors up to 12.2 Amps. You can use this versatile series of fully-isolated controllers for permanent magnet or shunt wound motors.

To make your installation quick and simple, all 340XRi, 680XRi and 1220XRi series controllers have easy to access drive adjustments, plug-on screw terminals and a small footprint from just 60mm x 105mm.

See parts list at back for low voltage supply options and fuses.

PRODUCT NAME

340XRi

340XRi 0.55KW / 0.75HP
680XRi 0.75KW / 1.0HP
1220XRi 1.8KW / 2.0HP

Technical highlights:

Switch selectable Tach or Armature voltage feedback
Adjustable IR compensation for improved AVF
Speed or torque control
Selectable dual voltage AC supply
Aux speed input
Pushbutton reversing function
150% overload with stall protection
Built-in current limit protection
Full 4 Quadrant operation

User adjustable:

Max motor speed
Min motor speed
Up ramp
Down ramp
Stability
Imax
IR comp
AVF/Tach switch
Speed range switch
AC voltage selector
Signal level comparator

Signal terminals:

+10V ref
Min speed
Ramped input +
Output +/-
Common
Input +/-
Pushbutton +
Pushbutton -
Run input
Common
Tach input

Level output
Level input
Overload output
Trip output
Ramp output
Demand output
Speed output
Current output
+ Speed input
Torque input

MODEL COMPARISON

MODEL	AC SUPPLY RANGE	TYPICAL ARMATURE VOLTAGE	MAX CONTINUOUS ARMATURE CURRENT	NOMINAL POWER
340XRi	100 to 130V	90V	3.4A	0.25KW (0.35HP)
	200 to 264V	180V	3.4A	0.55KW (0.75HP)
680XRi	100 to 130V	90V	6.8A	0.55KW (0.75HP)
	200 to 264V	180V	6.8A	0.75KW (1.0HP)
1220XRi	100 to 130V	90V	12.2A	0.75KW (1.0HP)
	200 to 264V	180V	12.2A	1.8KW (2.0HP)

DIMENSIONS 340XRi

H	105 mm
W	60 mm
D	120 mm

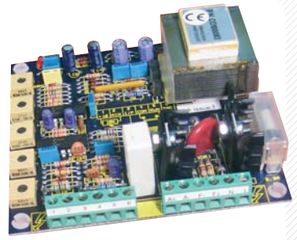
680XRi / 1220XRi

H	105 mm
W	70 mm
D	120 mm

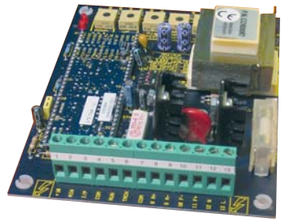
Refer to features chart for further details or download product manual for full specification.

PANEL MOUNTING OPTIONS

370
Page 11

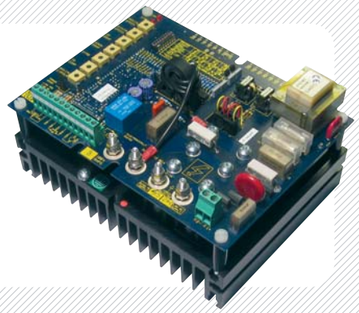


400
400i
Page 12-13

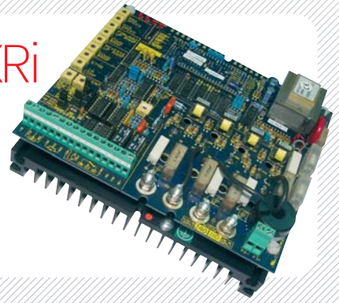


800
1200
Page 14-15

1600i
3200i
Page 16-17



3600XRi
Page 18-19



PRODUCT NAME

370

Non Isolated

0.55KW / 0.75HP

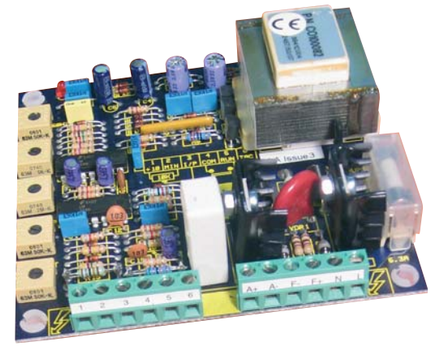
DESCRIPTION

Small footprint speed controller for permanent magnet or shunt wound motors up to 0.55KW.

Easily adjustable parameters include minimum and maximum motor speed, armature current, acceleration rate and IR compensation.

AC supply input selection for international mains voltage compatibility.

This unit is non-isolated.



SPECIFICATION

Speed range:	0 - 100%
Speed regulator:	0.1% tachogenerator 2% armature voltage feedback
Armature:	3.7 Amps continuous 200V max
Field:	0.5 Amps at 0.9 x AC supply voltage
Speed loop:	Full P + I armature voltage feedback
Current loop:	Full P + I current shunt feedback
Customer presets:	Max speed, min speed, up ramp, max armature current, IR comp. Adjustment non interactive ensuring ease of adjustment.

MODEL COMPARISON

MODEL	AC SUPPLY RANGE	TYPICAL ARMATURE VOLTAGE	MAX CONTINUOUS ARMATURE CURRENT	NOMINAL POWER
370	90 to 120V	90V	3.7A	0.25KW (0.38HP)
	200 to 264V	180V	3.7A	0.55KW (0.75HP)

DIMENSIONS

H	100 mm
W	100 mm
D	42 mm

See parts list at back for low voltage supply options and fuses.
Refer to features chart for further details or download product manual for full specification.

370 KEY FEATURES

- For DC motors rated up to 3.7 Amps
- Integral AC supply fuse
- Selectable dual international voltage supply 110/240V AC 50/60HZ
- Adjustable current overload protection
- Tachogenerator or armature voltage speed feedback
- Adjustable acceleration rate between 1 and 20 seconds
- Remote stop/start signal input facility
- Adjustable IR compensation for improved AVF speed regulation
- Sophisticated dual loop control
- Infinitely variable speed adjustment via remote potentiometer
- Electronic soft start
- Drive run input
- Suitable for permanent magnet, shunt wound or universal motors
- Compact footprint

400/400i KEY FEATURES

For DC motors rated up to 4 Amps

Single Quadrant operation

Extra 50% peak torque for rapid acceleration or shock loads

Torque control input for basic winding or tension control, with overspeed limiting

Ultra stable potentiometer reference for optimum long term speed and torque stability

Compact size

PRODUCT NAME

400

Non Isolated

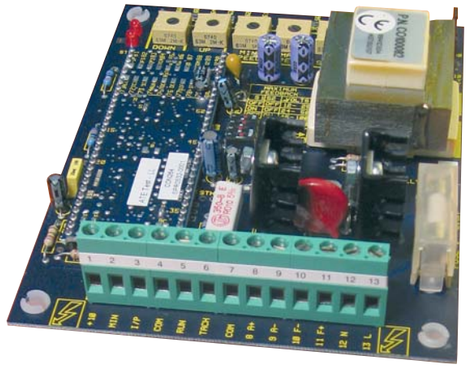
0.55KW / 0.75HP

DESCRIPTION 400 / 400i

For motors rated up to 4 Amps these are the first of an extensive range of models featuring the Sprint micro analog processor.

The micro analog processor provides many user benefits normally only seen in expensive "high end" products. This philosophy allows for cost saving solutions by meeting the users exact requirements and enhancing process performance.

As with all Sprint Electric products quality and reliability is a paramount part of the design process.



400

400i

International dual voltage supply compatibility

Switch selectable Tach or Armature voltage feedback

Integral AC supply fuse

MODEL COMPARISON

MODEL	AC SUPPLY RANGE	TYPICAL ARMATURE VOLTAGE	MAX CONTINUOUS ARMATURE CURRENT	NOMINAL POWER
400	100 to 130V	90V	4A	0.25KW (0.38HP)
	200 to 264V	180V	4A	0.55KW (0.75HP)
400i	100 to 130V	90V	4A	0.25KW (0.38HP)
	200 to 264V	180V	4A	0.55KW (0.75HP)

DIMENSIONS 400

H	130 mm
W	100 mm
D	40 mm

400i

H	160 mm
W	100 mm
D	50 mm

See parts list at back for low voltage supply options and fuses

PRODUCT NAME

400i

Fully Isolated

0.55KW / 0.75HP

SPECIFICATION 400 / 400i

Control action:	Dual Loop Proportional + Integral
Speed regulation:	0.1% Tachogenerator, 2% Armature Voltage
Armature:	4 Amps, continuous 200v max
Overload protection:	Extra 50% peak torque for 30 secs prior to stall trip operation
Field output:	0.5 Amps at 0.9 x AC supply voltage
Customer presets:	Max speed: 12v-200v full scale feedback Min speed 0-30% of max speed Up ramp (Acceleration) 1-30 secs Down ramp (Deceleration) 1-30 secs Stability IR comp Max Armature current 0-100%
Switches:	Feedback voltage - 4 ranges Torque or speed mode Tachogenerator or armature voltage feedback
Inputs:	Speed Torque Auxiliary speed input Auxiliary inverted speed input for trims etc. Run command Tachogenerator 4-20mA or 0-20mA Pushbutton stop/start input
Outputs:	Speed Current Setpoint ramp Total demand +/- 12v/-24v rails Zero Speed relay driver Stall relay driver
400	NON ISOLATED control electronics for single shaft applications
400i	FULLY ISOLATED control electronics allows interfacing with other systems

Refer to features chart for further details or download product manual for full specification.

400/400i KEY FEATURES

Output signals for easy display of motor speed and load

Switch selectable feedback calibration - no component changes

Precision tach rectifier

Zero speed signal output

Motor overload output

Remote stop/start input

User adjustable:
- Acceleration
- Deceleration
- Max motor speed
- Min motor speed
- Max motor current
- Stability
- IR comp

Motor overload output

Output signals for easy display of motor speed and load

Zero speed signal output

Switch selectable feedback calibration - no component changes

Adjustable IR compensation for improved AVF speed regulation

Adjustable stability control for optimum motor response

Easily interfaced with armature reversing module

800/1200 KEY FEATURES

800 controller for DC motors rated up to 8 Amps

1200 controller for DC motors rated up to 12 Amps

International dual voltage supply compatibility

Single Quadrant operation

Extra 50% peak torque for rapid acceleration or shock loads

User adjustable:
- Acceleration
- Deceleration
- Max motor speed
- Min motor speed
- IR comp
- Stability
- Max motor current

Torque control input for basic winding or tension control, with overspeed limiting

Many additional input and output signals

Switch selectable Tach or armature voltage feedback

4-20mA and 0-20mA loop input option as standard

Easily interfaced with armature reversing module

PRODUCT NAME

800/1200

Non Isolated

800
1.1KW / 1.5HP

1200
1.8KW / 2.0HP

DESCRIPTION

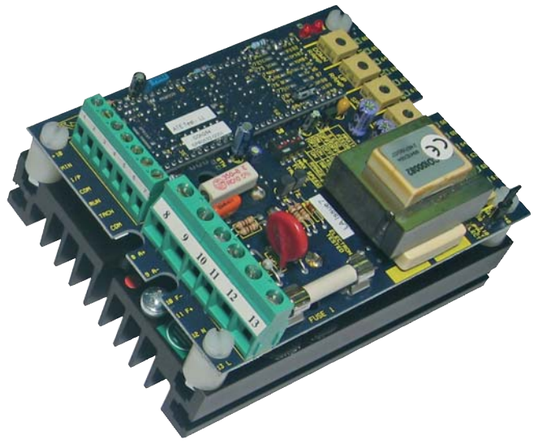
Two models available in 8 Amp and 12 Amp versions allow an easy upgrade path for those applications requiring extra power.

Both models feature the Sprint Electric micro analog processor module providing all the extra features normally associated with expensive "high end" products.

Compact design results in savings in panel space and hence costs.

Robust screw terminals reflect the overall quality and reliability, with overall performance meeting even the most arduous of applications.

Careful design with switch selection of key functions make the 800 and 1200 controllers quick and easy to install.



MODEL COMPARISON

MODEL	AC SUPPLY RANGE	TYPICAL ARMATURE VOLTAGE	MAX CONTINUOUS ARMATURE CURRENT	NOMINAL POWER
800	100 to 130V	90V	8A	0.55KW (0.75HP)
	200 to 264V	180V	8A	1.1KW (1.5HP)
1200	100 to 130V	90V	12A	0.9KW (1.0HP)
	200 to 264V	180V	12A	2.0KW (2.0HP)

DIMENSIONS

H	130 mm
W	100 mm
D	70 mm

See parts list at back for low voltage supply options and fuses.

PRODUCT NAME

800/1200

Non Isolated

800
1.1KW / 1.5HP

1200
1.8KW / 2.0HP

SPECIFICATION

Control action:	Dual Loop Proportional + Integral
Speed regulation:	0.1% Tachogenerator 2% Armature Voltage
Armature:	800, 8 Amps 1200, 12 Amps continuous 200v max
Overload protection:	Extra 50% peak torque for 30 secs prior to stall trip operation
Field output:	0.5 Amps at 0.9 x AC supply voltage
Customer presets:	Max speed: 12v-200v full scale feedback Min speed 0-30% of max speed Up ramp (Acceleration) 1-30 secs Down ramp (Deceleration) 1-30 secs Stability IR comp Max Armature current 0-100%
Switches:	Feedback voltage - 4 ranges Torque or speed mode Tachogenerator or Armature Voltage feedback
Inputs:	Speed Torque Auxiliary speed input Auxiliary inverted speed input for trims etc. Run command Tachogenerator 4-20mA or 0-20mA Pushbutton stop/start input
Outputs:	Speed Current Setpoint ramp +/- 12v/-24v rails Zero Speed relay driver Stall relay driver

Refer to features chart for further details or download product manual for full specification.

800/1200 KEY FEATURES

Adjustable Stability control for optimum motor response

Integral AC supply fuse

Ultra stable potentiometer reference for optimum long term speed and torque stability

Output signals for easy display of motor speed and load

Zero reference interlock facility

Adjustable IR compensation for improved AVF speed regulation

Switch selectable feedback calibration - no component changes

Precision tach rectifier

Zero speed signal output

Motor overload output

Identical footprint for 8 or 12 Amp output

Remote stop/start input

Features Sprint Electric micro analog processor

Pushbutton input for electronic control of motor stop/start

Compact size, saves panel space and makes for easy retrofitting

1600i/3200i KEY FEATURES

- **For DC motors up to 16 Amps**
- **Fully isolated control electronics**
- **On-board relay indicates zero speed and/or motor overload**
- **Features Sprint Electric micro analog processor**
- **Numerous inputs and outputs for complex system applications**

PRODUCT NAME

1600i/3200i

Fully Isolated

1600i 2.2kw

3200i 2.2kw to 11.0kw

DESCRIPTION

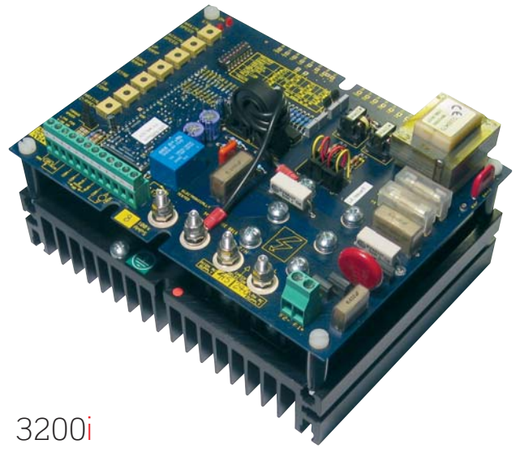
Designed to give the customer the choice.

The 1600i includes an extensive specification with quality, value for money and reliability assured.

At a full 2.2kw output capability this compact design is easily integrated and provides unparalleled performance.

For even higher powers and AC supply voltages. The 3200i is available up to 48 Amps.

1600i



3200i

- **Extra 50% peak torque for rapid acceleration or shock loads**
- **User adjustable:**
  - Acceleration
  - Deceleration
  - Max motor speed
  - Min motor speed
  - IR comp
  - Stability
  - Max motor current
- **Switch selectable power up inhibit**

MODEL COMPARISON

MODEL	AC SUPPLY RANGE	TYPICAL ARMATURE VOLTAGE	MAX CONTINUOUS ARMATURE CURRENT	NOMINAL POWER
1600i	100 to 130v	90v	16A	1.1kw (1.5hp)
	200 to 264v	180v	16A	2.2kw (3hp)
3200i/8	200 to 264v	180v	8A	1.1kw (1.5hp)
	360 to 440v	320v	8A	2.2kw (3hp)
3200i/16	200 to 264v	180v	16A	2.2kw (3hp)
	360 to 440v	320v	16A	4.0kw (5.3hp)
3200i/32	200 to 264v	180v	32A	4.5kw (6.0hp)
	360 to 440v	320v	32A	7.5kw (10.0hp)
3200i/48	200 to 264v	180v	48A	7.0kw (10.0hp)
	360 to 440v	320v	48A	11.0kw (14.6hp)

DIMENSIONS 1600i

H	150 mm
W	150 mm
D	90 mm

3200i

H	150 mm
W	200 mm
D	110 mm

See parts list at back for low voltage supply options and fuses.

PRODUCT NAME

1600i/3200i

Fully Isolated

1600i 2.2kw

3200i 2.2kw to 11.0kw

SPECIFICATION

Control action:	Dual loop Proportional + Integral
Speed regulation:	0.1% Tachogenerator 2% Armature voltage feedback
Armature:	1600i,16 Amps continuous 3200i, 32 Amps at 0.9 x AC supply voltage
Overload protection:	Extra 50% peak torque for 30 secs prior to stall trip operation
Field output:	1 Amp at 0.9 x AC supply voltage
Customer presets:	Max speed: 25v - 400v full scale feedback Min speed 0 to 30% of max speed Up ramp (Acceleration) 1-30 secs Down ramp (Deceleration) 1-30 secs Stability IR comp Max armature current 0-100%
Switches:	Maximum current - 4 ranges Feedback voltage - 4 ranges Relay function - zero speed and/or stall Power-up Inhibit Tach/AVF selection
Inputs:	Speed Torque 4-20mA and 0-20mA Auxiliary speed inputs +ve and -ve Drive Run Tachogenerator Pushbutton stop/start
Outputs:	Speed Current Setpoint Ramp Total Demand Zero speed and stall relay driver +/-12v, +/- 24v rails
Relay:	Volt free change over contacts for zero speed and/or stall
Other features:	Overspeed limit Over torque limit Inverse time overload 50% stall threshold Phase angle clamp Precision Reference Precision tach rectifier

Refer to features chart for further details or download product manual for full specification.

1600i/3200i KEY FEATURES

- **Switch selectable feedback calibration - no component changes**
- **Switched maximum current ranges for easy matching to motor current rating**
- **Switch selectable drive relay functions**
- **Ultra stable potentiometer reference for optimum long term speed and torque stability**
- **Adjustable Stability control for optimum motor response**
- **Switch selectable Tach or armature voltage feedback**
- **Torque control input for basic winding or tension control, with overspeed limiting**
- **International dual voltage supply compatibility**
- **4-20mA and 0-20mA loop input option as standard**
- **Output signals for easy display of motor speed and load**
- **Compact size, saves panel space and makes for easy retrofitting**
- **Zero reference interlock facility**
- **Single Quadrant operation**
- **Adjustable IR compensation for improved AVF speed regulation**
- **Precision tach rectifier**

3600XRi KEY FEATURES

Four Quadrant forward, reverse and braking operation

Five current outputs
- 4 Amp
- 8 Amp
- 16 Amp
- 32 Amp
- 36 Amp

Extra 50% peak torque for rapid acceleration or shock load

Fully regenerative - no braking energy dissipated as waste heat

Isolated control electronics for easy connection to other drives/equipment

Extremely compact size, saves panel space and makes for easy retrofitting

User adjustable presets for:
- Forward acceleration
- Reverse acceleration
- Forward deceleration
- Reverse deceleration
- Max motor speed
- Min motor speed
- Motor current limit
- Brake current limit
- Forward current limit
- Reverse current limit
- Positive current limit
- Negative current limit
- IR comp
- Stability

4Q torque input

2Q torque input

Regen to zero input

PRODUCT NAME

3600XRi

Fully Isolated

0.55kw to 9.5kw

DESCRIPTION

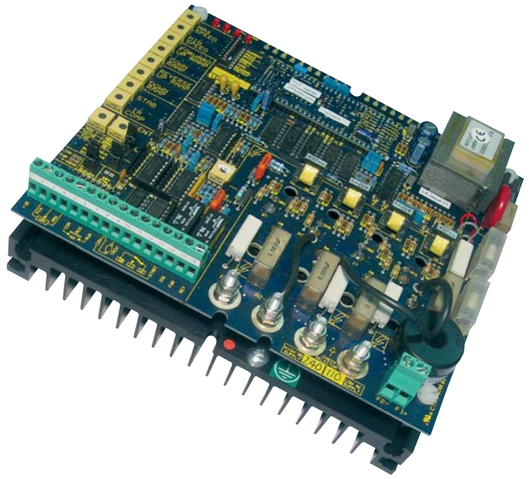
A four quadrant regenerative drive providing motoring and braking in both directions of rotation.

The regenerative ability is fully rated on a continuous basis with braking energy efficiently returned to the AC supply.

This feature sets the 3600XRi apart from AC inverter or vector drives where wasted energy is dissipated in costly resistor banks.

The 3600XRi is designed to meet the most demanding of process line applications where both loads and speeds vary in each direction.

Quality and reliability are assured by the use of advanced manufacturing and testing technologies.



MODEL COMPARISON

MODEL	AC SUPPLY RANGE	TYPICAL ARMATURE VOLTAGE	MAX CONTINUOUS ARMATURE CURRENT	NOMINAL POWER
3600XRi/4/LN	100 to 130v 200 to 264v	90v 180v	4A	0.25kw (0.4hp) 0.55kw (0.75hp)
3600XRi/8/LN			8A	0.55kw (0.75hp) 1.1kw (1.5hp)
3600XRi/16/LN			16A	1.1kw (1.5hp) 2.2kw (3.0hp)
3600XRi/16/LL	200 to 264v 360 to 440v	180v 320v	16A	2.2kw (3.0hp) 4.0kw (5.3hp)
3600XRi/32/LL			32A	5.0kw (6.6hp) 7.5kw (10hp)
3600XRi/36/LL			36A	5.5kw (7hp) 9.5kw (12.6hp)

DIMENSIONS

H	175 mm
W	200 mm
D	70 mm 36 Amp model 90 mm

See parts list at back for low voltage supply options and fuses.

PRODUCT NAME

3600XRi

Fully Isolated

0.55kw to 9.5kw

SPECIFICATION

Control action:	Dual loop Proportional and Integral
Speed regulation:	0.1% Tachogenerator 2% Armature voltage feedback
Armature:	Six models: 4, 8, 16, 32 and 36 Amps continuous
Overload protection:	Extra 50% peak torque for 30 secs prior to stall trip operation
Field output:	2 Amps at 0.9 x AC supply voltage
Customer presets:	Max speed: 25v - 400v full Scale feedback Min speed 0 to 30% of max speed Up ramp (Acceleration) 1-30 secs Down ramp (Deceleration) 1-30 secs Independent up/down ramp adjustment for forward and reverse direction Stability IR comp Multi option current limit
Switches:	Maximum current - 4 ranges Feedback voltage - 4 ranges Relay function - zero speed and/or stall and/or overload Tach/AVF selection
Inputs:	Speed 2Q/4Q Torque Auxiliary speed inputs +ve and -ve 4-20mA and 0-20mA Drive run Tachogenerator Fast quench Pushbutton stop/start, fwd/rev Regen to zero Jog Direct speed
Outputs:	Speed Current (bipolar & rectified) Setpoint Ramp Total Demand Zero speed and stall relay driver Overload timer relay driver +/-12v, +/- 24v rails
Relay:	Volt free change over contacts for zero speed or stall
Other features:	Overspeed limit Over torque limit Inverse time overload 50% stall threshold Precision Reference Dual setpoint

Refer to features chart for further details or download product manual for full specification.

3600XRi KEY FEATURES

Features Sprint Electric micro analog processor

Direct pushbutton inputs for control of stop/start, direction and jog functions

Includes all the features of 1600i and 3200i

Relay output indicates motor shaft reversal

Relay output indicates motor load > 105%

Dual setpoint facility for alternate speed e.g. run and crawl toggled speed reference ideal for easy end of travel reversal

Switch selectable Tach or Armature voltage feedback

Switched maximum current ranges for easy matching to motor current rating

Ultra stable potentiometer reference for optimum long term speed and torque stability

International dual voltage supply compatibility

On-board relay indicates zero speed and/or motor overload

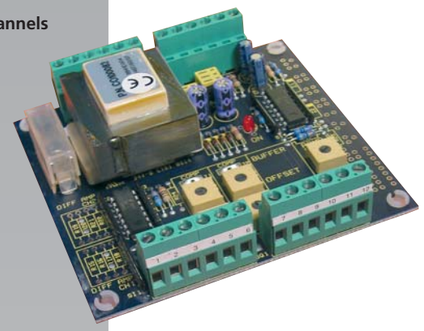
BUFFER

Versatile analog system signal blocks

Ideal for systems applications

Five independent channels

Mains powered



BUFFER CARD

The buffer card is a compact self-powered interface product for signal processing and amplification. The card has 5 independent channels with a large variety of uses, e.g multi setpoint systems, closed loop control, field weakening processor, signal buffering.

CHANNELS 1 AND 2. High accuracy differential amplifier with adjustable gain. Uses include inverting, non-inverting, amplification, attenuation, buffering, rectifying, filtering, load cell amplifier etc.

CHANNELS 3 AND 4. High accuracy summing amplifier with variable gain, voltage input and zero offset adjustment. Uses include summing, scaling, amplification, subtraction, clamping, comparator, integrator, buffering etc.

CHANNEL 5. Linear ramp with variable ramp rate and ramp reset input.

All channels are short circuit protected and can drive upto 10, 10K pots with + or - signals. Also included is a precision power supply with +/-12v and +/-24v outputs, the unit can be powered from 110/240v AC supplies.

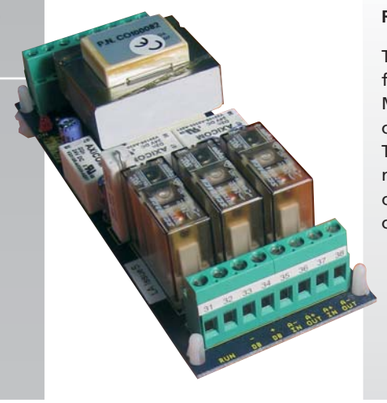
REV UNIT

Designed for use with Sprint 400, 800 and 1200 drives

Robust design for safe reversal from any speed

No additional contactors or relays required

Suitable for any armature voltage up to 180v DC



REVERSING UNIT

This compact unit allows for the safe reversal of DC Motors with armature currents up to 12 Amps. The card possesses all the necessary logic and unlike other available units, all the contactors for reversing and dynamic braking are integral to the unit.

For currents higher than 12 Amps the unit is easily interface with external power contactors.

DPM

Available in two versions 3½ and 4½ digit

Specifically designed for use with drives

Quick and easy to calibrate in any engineering units

Mains powered

Simple slide-in legend facility for process variable

DIGITAL PANEL METERS

A range of digital panel meters contained within a DIN size case.

DPM35S. Three and a half digit panel meter. Features include slide in legend, plug-in screw terminals, display hold, 110/240v AC supply. Display is 14mm red LED with range +/- 1999 and selectable decimal point. The unit is scaleable in engineering units via customer accessible multiturn preset. Any full scale voltage from +/-5v to +/-200v can be adjusted to read any display number. Customer accessible offset control. Full ratio facility with automatic "out of limits", 4-20mA loop input facility. Range adjustment to 100mV and an AC voltage measurement input facility.

DPM35SD. A four and a half digit version of the DPM35S with display reading to +/-19990. All other features included.

PRODUCT NAME

ENCLOSURES

Non Isolated

0.37kw to 1.8kw

DESCRIPTION

Seven drive models available in high quality aluminium enclosures.

From 0.37kw to 1.8kw in either forward (E) only or reversing (ER) variants. Features include IP40 protection, Mains on/off switch, dual voltage supply, fully fused, zero speed interlocked reversing, dynamic braking, set speed potentiometer with graduated scale.

These enclosures contain the Sprint Electric 370, 400, 800 and 1200 controllers already renowned for their extensive specification and versatility.

SPECIFICATION

Controls:

- On/Off AC supply rocker switch
- Set speed potentiometer
- AC supply fuse
- 400ER, 800ER, 1200ER: toggle switch for forward, stop and reverse

370E/400E/800E/1200E

400ER/800ER/1200ER

MODEL COMPARISON

MODEL	AC SUPPLY RANGE	TYPICAL ARMATURE VOLTAGE	MAX CONTINUOUS ARMATURE CURRENT	NOMINAL POWER
370E	110/240v	90/180v	3.7A	0.25kw/0.55kw
400E			4A	0.25kw/0.55kw
800E			8A	0.55kw/1.1kw
1200E			12A	0.9kw/1.8kw
400ER			4A	0.25kw/0.55kw
800ER			8A	0.55kw/1.1kw
1200ER			12A	0.9kw/1.8kw

DIMENSIONS

H	250 mm
W	175 mm
D	100 mm

See parts list at back for low voltage supply options and fuses.
Refer to features chart for further details or download product manual for full specification.

200XLV KEY FEATURES

- Motors and brakes in both directions
- Ideal for small DC motors and linear actuators up to 48v
- Fast response
- Panel or DIN rail mounting
- +/- 2A output, with 150% overload capability
- Single polarity supply with wide supply voltage range up to 48v
- Suitable for battery or standard unregulated DC supply
- Precision references for ultra stable operation
- +ve and -ve differential speed inputs
- Built in thermal protection with resettable trip
- Current limit protection
- 3 term PID control action
- Armature or tach feedback operation
- Position control facility
- Setpoint ramp facility
- Plug on screw terminals for easy wiring
- Adjustable IR compensation for improved AVF speed regulation
- CE marked with excellent EMC compliance
- Comprehensive manual with multi-applications data
- High bandwidth with superbly linear output
- Accepts bipolar or unipolar command inputs
- Direction control by switch or centre zero pot
- Easily interfaced for limit switch operation
- Ideal for low inductance, printed motors

PRODUCT NAME

200XLV

DESCRIPTION

The 200XLV is a fast response, linear DC motor speed controller for driving small low voltage brushed DC motors.

Ideal for positioning and servo type applications.

The 200XLV will motor and brake in both directions of rotation and operates from a single polarity supply, either battery or unregulated DC Source.

Excellent performance allows the 200XLV to meet the most demanding of applications. The extensive specification includes many standard features not normally associated with a drive the size and cost of the 200XLV.

The compact design has plug in screw terminals and provision for back panel or DIN rail mounting.

The 200XLV is fully EMC compliant and CE marked.

Due to its linear control circuits and linear output stage, this drive is ideal for applications with other highly sensitive low immunity circuits.

PRODUCT NAME | PART | PART NO.

SINGLE PHASE 1Q DC CONTROLLERS - NON ISOLATED

340

0.55KW 3.4A 240/110Vac 1Q Non Isolated

Controller	340
30/60V AC supply input version	340LV60
Semiconductor Fuse 6 x 32	CH00620A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16

680

0.75KW 6.8A 240/110Vac 1Q Non Isolated

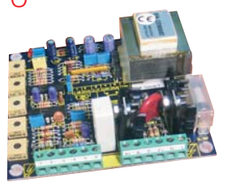
Controller	680
30/60V AC supply input version	680LV60
Semiconductor Fuse 6 x 32	CH00620A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16

1220

1.8KW 12.2A 240/110Vac 1Q Non Isolated

Controller	1220
30/60V AC supply input version	1220LV60
Semiconductor Fuse 6 x 32	CH00620A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16

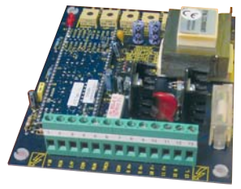
370



0.55KW 3.7A 240/110Vac 1Q Non Isolated

Controller	370
30/60V AC supply input version	370LV60
Semiconductor Fuse 6 x 32	CH00608A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16

400



0.55KW 4A 240/110Vac 1Q Non Isolated

Controller	400
30/60V AC supply input version	400LV60
Semiconductor Fuse 6 x 32	CH00608A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16

Please refer to website for further information or product technical manual for full specification.

PRODUCT NAME | PART | PART NO.

800

1.1KW 8A 240/110Vac 1Q Non Isolated

Controller	800
30/60V AC supply input version	800LV60
Semiconductor Fuse 6 x 32	CH00612A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16

1200

1.8KW 12A 240/110Vac 1Q Non Isolated

Controller	1200
30/60V AC supply input version	1200LV60
Semiconductor Fuse 6 x 32	CH00620A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16
KW ratings shown are at highest supply voltage.	

SINGLE PHASE 1Q DC CONTROLLERS - ISOLATED

340i

0.55KW 3.4A 240/110Vac 1Q Isolated

Controller	340i
30/60V AC supply input version	340iLV60
Semiconductor Fuse 6 x 32	CH00620A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16

680i

0.75KW 6.8A 240/110Vac 1Q Isolated

Controller	680i
30/60V AC supply input version	680iLV60
Semiconductor Fuse 6 x 32	CH00620A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16

1220i

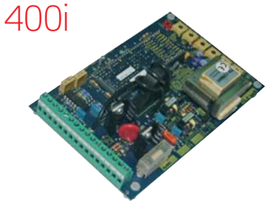
1.8KW 12.2A 240/110Vac 1Q Isolated

Controller	1220i
30/60V AC supply input version	1220iLV60
Semiconductor Fuse 6 x 32	CH00620A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16

Please refer to website for further information or product technical manual for full specification.

PRODUCT NAME | PART | PART NO.

400i



0.55KW 4A 240/110Vac 1Q Isolated

Controller	400i
30/60V AC supply input version	400iLV60
Semiconductor Fuse 6 x 32	CH00608A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16

1600i

2.2KW 16A 240/110Vac 1Q Isolated

Controller	1600i
30/60V AC supply input version	1600iLV60
Semiconductor Fuse 14 x 51	CH00730A
Fuseholder 14 x 51	CP102053
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16

3200i/8

2.2KW 8A 415/240Vac 1Q Isolated

Controller	3200i/8
30/60V AC supply input version	3200i/8LV60
Semiconductor Fuse 6 x 32*	CH00612A
Fuseholder 6 x 32*	CP102071
DIN Rail Clip for Fuseholder*	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (240V operation, if required)	FRLN16
Filter (415V operation, if required)	FRLL16
* Note: Two fuses & holders etc. required for 415V Line to Line operation.	

3200i/16

4KW 16A 415/240Vac 1Q Isolated

Controller	3200i/16
30/60V AC supply input version	3200i/16LV60
Semiconductor Fuse 14 x 51*	CH00730A
Fuseholder 14 x 51*	CP102053
Pot kit including graduated dial & knob	POTKIT
Filter (240V operation, if required)	FRLN16
Filter (415V operation, if required)	FRLL16
* Note: Two fuses & holders required for 415V Line to Line operation.	

3200i/32

7.5KW 32A 415/240Vac 1Q Isolated

Controller	3200i/32
30/60V AC supply input version	3200i/32LV60
Semiconductor Fuse Size 000*	CH00850A
Fuseholder Size 000*	CP102054
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLL36
* Note: Two fuses & holders required for 415V Line to Line operation.	

Please refer to website for further information or product technical manual for full specification.

PRODUCT NAME	PART	PART NO.
3200i/48	11kW 48A 415/240Vac 1Q Isolated	

Controller	3200i/48
30/60V AC supply input version	3200i/48LV60
Semiconductor Fuse Size 000*	CH00880A
Fuseholder Size 000*	CP102054
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLL50

* Note: Two fuses & holders required for 415V Line to Line operation.

SINGLE PHASE 4Q DC CONTROLLERS - ISOLATED, FULLY REGENERATIVE

340XRi — 0.55kW 3.4A 240/110Vac 4Q Regen Isolated

Controller	340XRi
30/60V AC supply input version	340XRiLV60
Semiconductor Fuse 6 x 32	CH00620A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16

680XRi — 0.75KW 6.8A 240/110Vac 4Q Regen Isolated

Controller	680XRi
30/60V AC supply input version	680XRiLV60
Semiconductor Fuse 6 x 32	CH00620A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16

1220XRi — 1.8KW 12.2A 240/110Vac 4Q Regen Isolated

Controller	1220XRi
30/60V AC supply input version	1220XRiLV60
Semiconductor Fuse 6 x 32	CH00620A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT
Filter (if required)	FRLN16

Please refer to website for further information or product technical manual for full specification.

PRODUCT NAME	PART	PART NO.
3600XRi/4	0.55KW 4A 240/110Vac 4Q Regen Isolated	

Controller	3600XRi/4/LN
30/60V AC supply input version	3600XRi/4/LV60
Filter	FRLN16
Semiconductor Fuse 6 x 32	CH00608A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT

3600XRi/8 — 1.1KW 8A 240/110Vac 4Q Regen Isolated

Controller	3600XRi/8/LN
30/60V AC supply input version	3600XRi/8/LV60
Filter	FRLN16
Semiconductor Fuse 6 x 32	CH00620A
Fuseholder 6 x 32	CP102071
DIN Rail Clip for Fuseholder	FE101969
Pot kit including graduated dial & knob	POTKIT

3600XRi/16 — 2.2KW 16A 240/110Vac 4Q Regen Isolated

Controller	3600XRi/16/LN
30/60V AC supply input version	3600XRi/16/LV60
Filter	FRLN16
Semiconductor Fuse 14 x 51	CH00730A
Fuseholder 14 x 51	CP102053
Pot kit including graduated dial & knob	POTKIT

3600XRi/16 — 4KW 16A 415/240Vac 4Q Regen Isolated

Controller	3600XRi/16/LL
Filter	FRLL16
Semiconductor Fuse 14 x 51*	CH00730A
Fuseholder 14 x 51*	CP102053
Pot kit including graduated dial & knob	POTKIT

* Note: Two fuses & holders required for 415V Line to Line operation.

3600XRi/32 — 7.5KW 32A 415/240Vac 4Q Regen Isolated

Controller	3600XRi/32/LL
30/60V AC supply input version	3600XRi/32/LV60
Filter	FRLL36
Semiconductor Fuse Size 000*	CH00850A
Fuseholder Size 000*	CP102054
Pot kit including graduated dial & knob	POTKIT

* Note: Two fuses & holders required for 415V Line to Line operation.

3600XRi/36 — 9.5KW 36A 415/240Vac 4Q Regen Isolated

Controller	3600XRi/36/LL
30/60V AC supply input version	3600XRi/36/LV60
Filter	FRLL36
Semiconductor Fuse Size 000*	CH00850A
Fuseholder Size 000*	CP102054
Pot kit including graduated dial & knob	POTKIT

* Note: Two fuses & holders required for 415V Line to Line operation.

KW ratings shown are at high supply voltage.

Please refer to website for further information or product technical manual for full specification.

THE SPRINT ELECTRIC ADVANTAGE

PANEL MOUNTING OPTIONS

DIN RAIL OPTIONS

	GENERAL SPECIFICATION		370	400	800	1200	400i	1600i	3200i	3600XRi	340/680/ 1220	340i/680i/ 1220i	340XRi/680XRi/ 1220XRi
Motor power. KW	Nominal motor power, dependant on motor armature voltage.	KW	0.37	0.55	1.1	1.8	0.55	2.2	1.1 to 11	0.55 to 9.55	0.55/0.75/1.8	0.55/0.75/1.8	0.55/0.75/1.8
Motor armature current	Maximum continuous armature current. Check model specification for precise rating.	A	3.7	4	8	12	4	16	8 to 48	4 to 36	3.4/6.8/12.2	3.4/6.8/12.2	3.4/6.8/12.2
AC supply voltage (Nominal)	110V AC.		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
(Refer to specifications for precise	240V AC.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
details of AC supply voltage options)	380V AC.								✓	✓			
	415V AC.								✓	✓			
	480V AC.												
Special AC input voltages	Refer to supplier.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Single quadrant operation	Drives motor in single direction.		✓	✓	✓	✓	✓	✓	✓		✓		
Two quadrant operation	Drives motor in single direction.											✓	
Regenerative stopping	Whilst stopping, braking energy is regenerated into AC supply for high energy efficiency.									✓			✓
Four quadrant operation	Drives and brakes motor in Forward and Revese direction. Braking energy regenerated into AC supply for high energy efficiency.									✓			✓
Isolated control electronics	Allows direct connection to other isolated drives or external equipment.						✓	✓	✓	✓		✓	✓
Made in Britain	British design and manufacture to highest standards for excellent quality and reliability.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Compact Size	Save space as well as cost. Makes for easy retrofitting.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Worldwide availability	Extensive overseas sales and support.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Available from stock	All products available from stock.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Micro analog processor	High accuracy processor is at the heart of the drive, with systems style features and optimised dynamics. The ultimate combination of performance & reliability.				✓	✓	✓	✓	✓	✓			
	ADJUSTABLE PARAMETERS												
Max speed preset	Sets the fastest running speed of the motor.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Min speed preset	Sets the slowest running speed of the motor. Adjustable from zero.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Jog speed preset	On-board customer preset for alternative speed reference.												
Zero speed preset	Allows fine adjustment at very low speeds.												
Up ramp preset	Sets the rate of motor acceleration. Adjustable between 1 and 30 seconds (20 seconds Model 370).		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Down ramp preset	Sets the rate of motor deceleration. Adjustable between 1 and 30 seconds.			✓	✓	✓	✓	✓	✓	✓		✓	✓
Independent fwd/ rev ramp presets	Independent setting of motor acceleration and deceleration rates (Forward up, Forward down, Reverse up, Reverse down).									✓			
Max current preset	Sets maximum motor torque and protects against accidental motor overload.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor current limit preset	Sets the maximum driving torque in both shaft directions.									✓			
Brake current limit preset	Sets the maximum braking torque in both shaft directions.									✓			
Forward current limit preset	Sets the maximum driving and braking torque in the forward shaft direction.									✓			
Reverse current limit preset	Sets the maximum driving and braking torque in the reverse shaft direction.									✓			
Positive current limit preset	Sets the maximum driving torque in the forward direction and maximum braking torque in the reverse direction.									✓			
Negative current limit preset	Sets the maximum braking torque in the forward direction and the maximum driving torque in the reverse direction.									✓			
Stability preset	Optimises drive stability and response.		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
IR Comp preset	Improves speed regulation when using Armature voltage feedback.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	DRIVE SIGNAL INPUTS		**370**	**400**	**800**	**1200**	**400i**	**1600i**	**3200i**	**3600XRi**	**340/680/ 1220**	**340i/680i/ 1220i**	**340XRi/680XRi/ 1220XRi**
Main speed input	Main speed set point input to drive.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Direct speed input	This +/-10V input may be used for immediate unramped speed changes. It is added to the ramped speed setpoint.		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Auxiliary negative speed input	+/- 10V input, subtracts from main speed setpoint.			✓	✓	✓	✓	✓	✓	✓			
Auxiliary positive speed input	+/- 10V input, adds to main speed setpoint.			✓	✓	✓	✓	✓	✓	✓		✓	✓
4 - 20mA loop input	For industry standard remote control of drive speed.			✓	✓	✓	✓	✓	✓	✓			
0 - 20mA loop input	For industry standard remote control of drive speed.			✓	✓	✓	✓	✓	✓	✓			
Torque input	Allows drive to control torque instead of speed for winding or tension control applications.			✓	✓	✓	✓	✓	✓	✓		✓	✓
4Q torque input	Allows control of torque instead of speed when driving or braking in either direction.									✓			✓
2Q torque input	Allows control of torque instead of speed when driving forward or braking in reverse.									✓			
Field current input	Allows external control of motor field current. Ideal for constant horsepower applications.												
Drive run input	Remote Stop / Start input from external contact or PLC etc.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fast quench input	Provides immediate electronic shutdown. The motor will coast to rest.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Regen to zero input	Causes immediate braking at torque limit until motor stops.									✓			✓
Motor temperature alarm input	Immediate latched drive shutdown in the event of motor over temperature, with LED indication.												
Alarm reset input	Allows external signal to reset field loss, tacho loss or motor temperature alarms.												
Aux trip input	Latched input providing immediate drive shutdown, with LED indication.												
Direct pushbutton inputs	Direct inputs for Forward, Reverse, Stop / Start and Jog without the use of additional relays.									✓		✓	✓
Pushbutton start input	Allows choice of start command from either momentary or maintained contacts.									✓			
Electronic contactor input	Pushbutton input for electronic control of motor stop / start.			✓	✓	✓	✓	✓	✓	✓			
PLC compatible inputs	All drive control inputs are referred to isolated 0V for easy implementation of stop/start, forward/reverse etc. where applicable.						✓	✓	✓	✓		✓	✓
	DRIVE SIGNAL OUTPUTS												
Speed output	Provides easy display of motor speed when used in conjunction with panel meters (e.g. Sprint DPM35S).			✓	✓	✓	✓	✓	✓	✓		✓	✓
Armature current output	Voltage output signal proportional to motor armature current. Ideal for use with panel meters (e.g. Sprint DPM35S). Also used in load sharing applications.			✓	✓	✓	✓	✓	✓	✓		✓	✓
Rectified armature current output	Available rectified or bipolar for use with end zero or centre zero meters.									✓			
Setpoint ramp output	Ideal for master reference to control the acceleration of follower drives in multi motor applications.			✓	✓	✓	✓	✓	✓	✓		✓	✓
Ramp connect mode	Allows the speed demand ramp to be re-routed via external systems.												
Total demand output	The sum of all setpoint inputs, for more complex follower applications.						✓	✓	✓	✓		✓	✓
Current demand output	Voltage output signal representing torque required to maintain speed.							✓	✓	✓			
Armature voltage output	Output signal proportional to motor armature voltage. Ideal for calculation of motor power.												
Field current output	Voltage output signal proportional to motor field current.												
Remote alarm outputs	Provides external indication of alarm status.											✓	✓
	DRIVE POWER OUTPUTS												
150% overload capability	Extra 50% peak torque for 30 seconds prior to stall trip operation. Ideal for rapid acceleration, shock loads etc.			✓	✓	✓	✓	✓	✓	✓			

PANEL MOUNTING OPTIONS

DIN RAIL OPTIONS

		370	400	800	1200	400i	1600i	3200i	3600XRi	340/680/ 1220	340i/680i/ 1220i	340XRi/680XRi/ 1220XRi
Field output	Used for field excitation of shunt wound motors.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Half wave field facility	Allows field voltage output to be either 0.9 x AC input or 0.4 x AC input.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Delayed field quench	The motor field output is maintained for 15 seconds after the contactor is de-energised to enable dynamic braking.											
Economy field facility	The field output is automatically reduced to 40% 15 seconds after the main contactor is de-energised. Used to keep motor temperature constant in cold climates.											
Adjustable field output	User can adjust the field output voltage to match any motor.											
+24V output	For customer use. 25mA max. Unregulated.						✓	✓	✓			
-12V / + 12V output	For customer use. 10mA max. Regulated.		✓	✓	✓	✓	✓	✓	✓			
-24V output	For customer use. 25mA max. Unregulated.		✓	✓	✓	✓	✓	✓	✓			
	RELAYS AND RELAY DRIVERS											
Stall relay	Volt free contacts that change over if the internal overload trip has operated to protect the motor (see Stall Lamp).						✓	✓	✓			
Stall relay driver	Signals that the internal overload trip has operated to protect the motor. Used to drive an external signal relay.		✓	✓	✓	✓	✓	✓	✓		✓	✓
Zero speed relay	Volt free contacts that change over when the motor is at, or near, zero speed. Ideal for armature reversal/brake control applications.						✓	✓	✓			
Zero speed relay driver	Signals that the motor is at, or near, zero speed. Ideal for armature reversal/brake control applications. Used to drive an external signal relay.		✓	✓	✓	✓	✓	✓	✓		✓	✓
Shaft reverse relay	Volt free relay contacts indicate zero speed or reverse shaft direction. Ideal for direction dependant speed selection.								✓			
Shaft reverse relay driver	Signals zero speed or reverse shaft direction. Ideal for direction dependant speed selection. Used to drive an external signal relay.								✓			
Timer relay	Volt free relay contacts indicate that the motor load is above 105% and that the stall timer is operational.								✓			
Timer relay driver	Signals that the motor load is above 105% and that the stall timer is operational. Used to drive an external signal relay.								✓			
	SWITCH AND JUMPER SELECTABLE FUNCTIONS											
Switched speed ranges	Allows easy matching of drive output to motor or tacho voltage rating.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Switched current ranges	Allows easy matching of drive output to motor current rating.						✓	✓	✓			
Switched relay functions	Selection of on-board relay function.						✓	✓	✓			
Switched power up inhibit	Prevents motor restarting after loss of mains supply.						✓	✓				
Switched tacho/AVF mode	Easy selection of Tacho or Armature voltage feedback.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Switched field weakening mode	Allows selection between field weakening and regulated field mode.											
AC supply selection jumper	Easy selection of AC supply voltage.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Zero speed quench jumper	Prevents motor shaft creep at zero setpoint.								✓			
1 second quench jumper	Causes immediate braking for 1 second at torque limit, followed by electronic shutdown.								✓			
Ramp to zero function	Pushbutton input for controlled deceleration to stop (1-30 secs). Regenerating if necessary.								✓			
	DRIVE ALARMS, PROTECTION AND INDICATORS	**370**	**400**	**800**	**1200**	**400i**	**1600i**	**3200i**	**3600XRi**	**340/680/ 1220**	**340i/680i/ 1220i**	**340XRi/680XRi/ 1220XRi**
Drive healthy output	Relay drive signal to show that drive is ready to go.											
Field loss alarm	Immediate latched drive shutdown in the event of loss of field current, with LED indication.											
Tacho loss alarm	Immediate latched drive shutdown in the event of tacho loss. LED indication.											
Peak current alarm	Immediate latched drive shutdown in the event of excessive armature fault current. LED indication.											
Motor temperature alarm	Immediate latched drive shutdown in the event of motor over temperature. LED indication.											
Aux trip alarm	Latched input providing immediate drive shutdown. LED indication.											
Drive thermal alarm	Immediate latched drive shutdown in the event of inadequate Drive ventilation. LED indication.											
Phase loss shutdown	This function provides safe shutdown if any phase is lost.											
Alarm defeat jumpers	Allows individual override of alarms.											
Overspeed limit	Speed reference inputs remain active when operating in torque mode, thus allowing control of the overspeed limit.	✓	✓	✓	✓	✓	✓	✓	✓			
Overtorque limit	Torque reference inputs remain active when operating in speed mode, thus allowing control of the overtorque limit.	✓	✓	✓	✓	✓	✓	✓	✓			
Zero reference interlock	Facility to prevent drive starting unless speed reference is at zero. Ideal for extruders.		✓	✓	✓	✓	✓	✓	✓			
Stall timer warning	Signal output warns that the motor load is above 105% and that the stall timer is operating. LED indication.								✓		✓	✓
Inverse time overload	Stall trip time automatically extends beyond 30 seconds for overloads less than 50%.		✓	✓	✓	✓	✓	✓	✓		✓	✓
50% stall threshold option	Allows protection of smaller motors, whilst retaining the 150% controller peak output for short term overloads.		✓	✓	✓	✓	✓	✓	✓			
Integral line fuse	AC Line fuse included as standard.	✓	✓	✓	✓	✓						
Contactor control logic	Ensures correct sequencing of power contactor control.											
Phase angle clamp option	Limits the maximum armature voltage if a low voltage motor is used.		✓	✓	✓	✓	✓	✓	✓			
ON lamp	Indicates control electronics is powered up.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
STALL lamp	Indicates that the internal drive trip has operated to protect the motor due to excessive load or incorrect calibration.		✓	✓	✓	✓	✓	✓	✓		✓	✓
Slave contact lamp	LED indication that the main contactor slave relay is energised.											
+/- current lamps	Shows the sign of the armature current demand. Ideal for monitoring load stability and motor/brake operating mode during commissioning.								✓			✓
Field voltage display	Trend indication of field regulator output voltage.											
	SPEED CONTROL FEATURES											
Precision reference	Ultra stable 10V setpoint reference for optimum long term speed and torque stability.		✓	✓	✓	✓	✓	✓	✓		✓	✓
S-shaped ramps facility	Allows the speed demand ramp to have a soft profile at start and end of speed change.											
Precision tacho rectifier	Prevents motor runaway due to incorrect tacho polarity. Provides motor reversal insensitivity. Senses tacho feedback accurately right down to zero speed.		✓	✓	✓	✓	✓	✓				
Tacho feedback	Allows high accuracy speed control when used with precision tachogenerator (typically 0.1%).	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Speed derivative facility	Allows extra fast response with tacho feedback.											
Low voltage tacho facility	Allows use of tacho with low voltage output.	✓	✓	✓	✓	✓	✓	✓	✓			
Armature voltage feedback	Built-in feature provides cost free alternative to tachogenerator.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
High accuracy AVF	Armature voltage feedback with field regulation approaches the performance of tacho feedback without the added cost.											
Regulated field	High accuracy control of motor field current provides excellent speed accuracy without the need for a tacho. Allows easy matching of drive.											
Enhanced armature voltage range	This special feature eliminates the reduction of armature voltage otherwise required for three phase regenerative drive applications. This reduces motor cost and standardises motor specification.											
Built in field weakener	Automatic control of motor field current allows higher than standard motor speed where mechanically permissible.											
Toggled +/- 10V reference	Dual polarity reference set by momentary contact inputs. Ideal for end of travel reversal etc.								✓		✓	✓
Dual setpoint facility	Allows pushbutton selection of two alternative speeds. e.g. Run and Crawl.								✓			
Counter EMF winding facility	Allows drive to become a power controller for specialist winding applications.											
	AC MAINS SUPPLY											
International dual voltage supply	Compatible with world-wide mains supply.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low voltage version	Special option for 24 and 48V armature motors.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Autoranging supply synchronisation	Drive automatically adjusts to any mains supply frequency (45 - 65Hz).		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Separate stack supply	Allows control and power supplies to be at different voltages.											