

# Product Data Bulletin

## ALTISTART 46 SOFT START Cross Reference Guide

### OPEN-STYLE ALTISTART SOFT START

If you only have the ATS23 catalog number, use Table 1 to cross reference an open-style ALTISTART soft start.

**Table 1: Cross Reference for ATS23 to ATS46 Open-Style Soft Start**

MOTOR			OPEN STYLE		
Horsepower			ATS23		ATS46
208V	230V	460V	Standard	Pump	All Applications
—	3	5	ATS23U70N	ATS23PU70N	
2	3	7.5	ATS23D12N	ATS23D12N	
3	5	10	ATS23D16N	ATS23D16N	ATS46D17N
5	7.5	15	—		ATS46D22N
7.5	10	20	ATS23D30N	ATS23D30N	ATS46D32N
10	—	25	—		ATS46D38N
—	15	30	ATS23D44N	ATS23PD44N	ATS46D47N
15	20	40	—		ATS46D62N
20	25	50	ATS23D72N	ATS23PD72N	ATS46D75N
25	30	60			ATS46D88N
30	40	75	ATS23C10N	ATS23PC10N	ATS46C11N
40	50	100	ATS23C15N	ATS23PC15N	ATS46C14N
50	60	125			ATS46C17N
60	75	150			ATS46C21N
75	100	200	ATS23C24N	ATS23PC24N	ATS46C25N
100	125	250	ATS23C30N	ATS23PC30N	ATS46C32N
125	150	300			ATS46C41N
150	—	350	ATS23C41N	ATS23PC41N	ATS46C48N
—	200	400			ATS46C59N
200	250	500	ATS23C58N	ATS23PC41N	ATS46C66N
250	300	600			ATS46C79N
350	400	800	ATS23C82N	ATS23PC82N	ATS46M10N
400	450	900	ATS23M12N	ATS23PM12N	ATS46M12N

If additional information is available, when cross referencing an ATS23 soft start to an ATS46, you should consider:

- Horsepower
- Features
- Size

### Horsepower

The ATS46 soft start is available in more horsepower (HP) ratings than the ATS23. The best cross reference is based on the actual HP of the motor, but if you do not know the HP, use the ATS46 soft start that corresponds to the ATS23. The ATS46 soft start is factory preset for use with the motor for which it is rated. If a larger ATS46 soft start is used than is required, the customer will have to adjust the nominal motor current. While not a problem, it is helpful to know the motor data before cross referencing the soft start.

## Features

The open ATS46 soft start offers the same features as the ATS23, including:

- Starting methods: soft start, current limit and boost
- Stopping methods: freewheel, soft stop, DC injection braking
- Class 10 overload protection

In addition, the ATS46 soft start offers the following:

- Improved performance on acceleration and deceleration – torque control
- Digital keypad for set up and display
- Selection of overload Class 10, 10A, 20 & 30, and Sub-Class 2, 15 & 25
- Stall, jam, and phase reversal protection
- Analog output for 4 to 20 or 0 to 20 mA indication of current, torque, thermal state, or power factor
- Logic input for force to freewheel, thermal overload reset, or external fault indication

The ATS46 soft start is not available as a pump-specific product. The ATS46 soft start provides torque control, which provides better control of pumps (and prevention of water hammer) than the ATS23 pump version. Given the ATS23 pump version was the best product on the market for pumping applications, the ATS46 soft start performance improvements are quite significant.

The ATS46 soft start uses InTele® Braking rather than DC injection braking, which means no external components are required. Also, InTele Braking causes less motor heating and provides more braking torque than the ATS23 braking function.

## Size

The ATS46 soft start is the same size as the ATS23. Only the control module was modified in order to expedite the introduction of the ATS46 soft start technology into the market.

## Price

Price should not be an issue. If you take an order for an ATS23 soft start, the ATS46 soft start can be supplied at the same price.

## ENCLOSED ALTISTART SOFT START

Because the ATS46 soft start is available in more HP ratings than the ATS23, the enclosed product also has more HP ratings. The best cross reference is based on the actual motor HP. If you do not know the HP, use the Class 8638 with ATS46 soft start that corresponds to the Class 8638 with ATS23 soft start. Use Table 2 to cross reference a Class 8638 enclosed ALTISTART.

For a complete listing of enclosed products, refer to the ATS46 Price Guide, 8636PL9701.

Standard power circuits of the enclosed ATS46 family are also available from 350 – 1000 HP. For quotation assistance, call the Industrial Application Group at (919) 217-6600.

**Table 2: Cross Reference for ATS23 to ATS46 Enclosed Soft Start**

MOTOR Horsepower			CLASS 8638 w/ATS23 Type	CLASS 8638 w/ATS46 Type
208V	230V	460V		
	3	5	PBA**	Use Type ND
2	3	7.5	PCA**	Use Type ND
3	5	10	PDA**	NDA**
5	7.5	15		NEA**
7.5	10	20	PFA**	NFA**
-	15	30	PHA**	NHA**
15	20	40		NIA**
20	25	50	PJA**	NJA**
25	30	60		NKA**
30	40	75	PLA**	NLA**
40	50	100	PMA**	NMA**
50	60	125		NNA**
60	75	150		NOA**
75	100	200	PPA**	NPA**
100	125	250	PQA**	NQA**
125	150	300		NRA**
150	-	350	PSA**	NSA**
-	200	400	PTA**	NTA**
200	250	500		NUA**

\*\* Use the same voltage code and power circuit indicators for ATS23 and ATS46 soft start (i.e. PPA4N→NPA4N).

**Features**

The enclosed ATS46 soft start offers the same features as the ATS23, including:

- SCR fault isolation by either shunt trip coil or isolation contactors
- CPT for 120 VAC control of relays and contactors
- UL/CSA listed

In addition, the ATS46 soft start offers the following:

- Door mounted keypad
- Expanded HP and application range
- 65 kA withstand on fusible version (Class 8638 only)

We have expanded the enclosed ALTISTART product offering to meet a wider variety of customer needs, following the guidelines in Table 3. Use these guidelines to specify new enclosed products.

**Table 3: Specifying Enclosed ATS46 Products**

	The Rule	Exceptions
<b>Class</b>	No change in Class <b>8638</b> =ALTISTART w/ fusible disconnect in Type 12 enclosure	New classes available <b>8639</b> =ALTISTART w/ circuit breaker in Type 12 enclosure <b>8636</b> =ALTISTART w/o disconnect in Type 1 or 12 enclosure
<b>Type</b>	Change 1st letter from <b>P</b> to <b>N</b> Same format for Type number	More models available Heavy duty rating also available (Type L)
<b>Forms</b>	No change in forms	Some ATS23 forms not needed <b>D1</b> : Pump option not required — ATS46 soft start performs better than ATS23 pump version without \$750 adder <b>Z23</b> : Braking contactor not required — ATS46 soft start performs braking internally <b>Y444</b> : Phase loss relay not required — ATS46 soft start has phase loss protection, even with a shorting contactor

When we added the new options, we considered the percentage of opportunities covered by each option and the differences in the option. Not all options are available in every Class (refer to Table 4).

**Table 4: Available Options for Enclosed ATS46 Soft Starts**

ATS46 Options	Class 8636	Class 8638	Class 8639
Enclosure	Type 1 or 12	Type 12	Type 12
Max HP @ 460 V	400	500	500
Heavy Duty/Long Start	N	Y	Y
Full Voltage Bypass	N	Y*	Y*
Reversing	N	Y	Y
Date Available	Sept. '97	May '97	May '97
	* Full voltage bypass only available w/ power circuit <b>N</b> (i.e. Type NPA4N).		

### Duty Rating

The "heavy duty" option is for non-traditional applications that require long start times and high starting torque. The estimated consumer demand is about 25%. The duty rating is increased primarily by using a higher-rated disconnect and increasing the ATS soft start by one size. The heavy duty option is not available in the non-combination version, in which the customer must select the disconnect to meet the application requirements. For heavy duty applications using non-combination devices, select the next larger size, which is also required for the open style product.


### Full-Voltage Bypass

The full-voltage bypass option is only available on combination devices and only with power circuit N (the isolation contactor is required to keep voltage off the soft start while in the full-voltage mode). This option is not available in the non-combination version because power connections from the disconnect are required to make the circuit. The full-voltage bypass option will be pre-engineered by the end of the summer. Until then, Form Z24 is not available at standard lead times.

### Reversing

The reversing option is only available in the combination product. There has been very low usage in this power circuit, but the enclosures are sized to include the additional fully-rated reversing contactor. To minimize the enclosure size, reversing is not available in the non-combination version.

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