

Sub-micro Drives



AC Tech

member of the **Lenze** Group

Drive for Global Excellence



About AC Technology

AC Technology, headquartered in Uxbridge Massachusetts (USA), develops and manufactures variable frequency AC motor drives ranging from fractional to several hundred horsepower. AC Tech continues to be a leader and innovator in drive design, in many cases leading in developments that have been adopted by nearly every other drive manufacturer.

A member of the Lenze Group, a privately held corporation based in Hamlin Germany, AC Tech has access to a global network of distributors and service centers world-wide. AC Tech products are targeted to meet the demanding requirements of Industrial and Commercial Users, Contractors and OEM's.

AC Tech has set a commanding pace for growth within the Motion Control marketplace. Not only by producing products that deliver the best value to existing variable frequency drives applications, but by the development of products that replace other motor control technologies. AC Tech drives are being employed in applications that were using DC motors and drives, mechanical variable speed, eddy-current clutches and hydraulics.

Today's drive technology has also allowed AC Tech to replace simple motor starting technologies (such as reversing contactors and two-speed motors) with variable frequency drives, which provide significant benefits while maintaining comparable cost and size.

AC Technology can be found online at www.actechdrives.com.

The AC Tech approach to drive development

As engineers, OEMs and technicians well know, there are no panaceas to motor control. The truth is, different motion control requirements require different tools. We're motion control specialists— so we develop a family of drives that match a wide range of applications, efficiently and cost-effectively.

A low-cost drive with a small footprint

AC Tech developed the SCM Series drive for simple variable speed applications and to work as an effective replacement for electro-mechanical starters, mechanical variable speed drives, solid-state soft-starters and DC drives. Not much larger than an IEC contactor, the SCM inherently provides contactor-less reversing, smooth acceleration and deceleration without loss of torque, operation at multiple speeds without the need for a special motor and the lower maintenance and ready accessibility of a standard three-phase motor.

ECM requirements

In a similar manner, we developed the SCL Series anticipating our customers' demand for small drives that include the input filter required by European Union directives.

Complex applications

The SCF Series provides our customers who require more functionality with a full-function

sub-micro drive that includes more inputs & outputs and serial communications capability using the Modbus standard protocol. Optional models of the SCF allow integrated PI set-point control or control of high-speed motors (up to 1000Hz).

DeviceNet Protocol

Some customers liked the features of the SCF but their machine controls were centered around the DeviceNet communications protocol. AC Tech responded with the SCD Series, a drive that provides this protocol not as an option, as is the case with other competitors' drives, but built into the product for simple integration into the system.

High peak torque, low speed

The TCF Sensorless Vector Drive can provide continuous operation under 1Hz and still deliver full motor torque, that's greater than a 60 to 1 speed range! As a full featured drive, the TCF also provides a full complement of I/O including Modbus Serial communications.

No single variable frequency drive can be the optimal solution for all applications. AC Tech is dedicated to providing you with real value—the best product for the motion control challenge you need to solve, the drive that fits the application.



SCM



SCL



SCF



SCD



TCF



SCM: Basic and Beyond

Feature-rich for motor control applications that require variable speed, and cost-effective enough for those that do not. The SCM Series drive virtually eliminates the need for 2-speed motors and starters and reversing starters, and it can be applied as a "phase-converter" to operate a three-phase motor from a single-phase supply.

The SCM is typically a better solution than mechanical variable speed, DC control or eddy-current drives.



SCL: Basically European

Based on the SCM drive, the SCL targets European single-phase applications that require conformance to the European Union standard for noise immunity: EN 61800-3, Class A.

The SCL has a line filter built-in to meet the rigorous European standard for EMI and RFI noise suppression.



SCF: Full Featured

When your application requires more functionality, the SCF has the additional I/O to meet your needs.

2-wire RS485 network communication using Modbus RTU protocol is standard. The SCF allows for either 2-wire or 3-wire start stop without programming! Additional I/O provides for two solid-state outputs and two analog outputs (speed and load).

The SCF also has optional models that offer set-point (PI) control or control for high-speed motors up to 1000Hz output frequency.

IP 20 "Contactor" style enclosure with Power terminals on the top, Motor terminals on the bottom

Optional footprint filter

Integral line filter

Optional footprint filter

0-10 VDC or 4-20 mA speed reference

One relay and one open-collector output

Two open-collector outputs with internal power supply, can drive

Up to 8 selectable preset speeds

Modbus Communication

Isolated start/stop plus three programmable inputs

DC Injection Braking on Stop (up to 1 hour)

Analog Outputs of speed and load



Selections

AC Tech Sub-micro drives are available in the powers and input voltages as shown below.

SCM

HP	(kW)	120V 1Ø		208-240V 1Ø		208-240V 3Ø		400-480V 3Ø		208-240V 1Ø	
		Model#	Size	Model#	Size	Model#	Size	Model#	Size	Model	Size
0.33	(0.25)	SM004S	A5	SM204S	A5					SL204S	A5
0.5	(0.37)	SM005S	A5	SM205S	A5	SM205	A5	SM405	A1	SL205S	A5
0.75	(0.55)			SM208S	A6					SL208S	A5
1	(0.75)	SM010S	B5	SM210S	A6	SM210	A6	SM410	A2	SL210S	A6
1.5	(1.1)	SM015S	B5	SM215S	B5	SM215	A7	SM415	A3	SL215S	B5
2	(1.5)			SM220S	B5	SM220	A7	SM420	A3	SL220S	B5
3	(2.2)			SM230S	B6	SM230	B6	SM430	B1	SL230S	B6
5	(4.0)					SM250	B2	SM450	B2		
7.5	(5.5)					SM275	C1	SM475	B2		
10	(7.5)					SM2100	C1	SM4100	C1		
15	(11)					SM2150	D1	SM4150	C1		

SCL

SCF

HP	(kW)	208-240V 1Ø or 3Ø		208-240V 3Ø		400-480V 3Ø		480-590V 3Ø	
		Model#	Size	Model#	Size	Model#	Size	Model#	Size
.25	(0.18)	SF203Y	A1						
.5	(0.37)	SF205Y	A1			SF405	A1		
1	(0.75)	SF210Y	A2	SF210	A2	SF410	A2	SF510	A2
1.5	(1.1)	SF215Y	B1	SF215	A3	SF415	A3		
2	(1.5)	SF220Y	B2	SF220	A3	SF420	A3	SF520	A3
3	(2.2)	SF230Y	B2	SF230	A3	SF430	A3	SF530	B2
5	(3.7)	SF250Y	C1	SF250	B2	SF450	B2	SF550	B2
7.5	(5.5)			SF275	C1	SF475	C1	SF575	C1
10	(7.5)			SF2100	C1	SF4100	C1	SF5100	C1
15	(11)			SF2150	D1	SF4150	D1	SF5150	D1
20	(15)			SF2200	D1	SF4200	D1	SF5200	D1
25	(18.5)					SF4250	D1	SF5250	D1
30	(22)					SF4300	D1		

Standard Features:

- UL approved thermal O/L
- 8 preset speeds
- 0–10 VDC + 4–20mA speed reference
- DC braking
- Relay or transistor output(s) depending on model
- 3 or more programmable inputs
- Current limit to 180% (200% TCF) w/foldback
- Fault history (last 8)
- Programming via:
 - drive face
 - remote keypad (excluding SCD)
 - PC with TechLink
 - EPM Programmer
- Isolated Control Terminals
- Highly visible 3 digit LED display
- Quiet motor operation
- Forward/Reverse
- EPM (see previous page)

Size	Height		Width		Depth	
	in	(mm)	in	(mm)	in	(mm)
A1	5.75	(146)	2.88	(74)	3.94	(100)
A2	5.75	(146)	2.88	(74)	4.74	(120)
A3	5.75	(146)	2.88	(74)	5.74	(146)
A5	5.75	(146)	2.88	(74)	3.26	(83)
A6	5.75	(146)	2.88	(74)	3.63	(92)
A7	5.75	(146)	2.88	(74)	5.56	(141)
B1	5.75	(146)	3.76	(95)	5.24	(133)
B2	5.75	(146)	3.76	(95)	6.74	(171)
B5	5.75	(146)	3.76	(95)	4.88	(124)
B6	5.75	(146)	3.76	(95)	5.53	(140)
C1	7.75	(197)	5.02	(128)	7.18	(182)
D1	9.75	(248)	6.68	(170)	8.00	(203)

SCD

HP	(kW)	208-240V 1Ø or 3Ø		208-240V 3Ø		400-480V 3Ø		480-590V 3Ø	
		Model#	Size	Model#	Size	Model#	Size	Model#	Size
0.25	(0.18)	SD203Y	A1						
0.5	(0.37)	SD205Y	A1			SD405	A1		
1	(0.75)	SD210Y	A2	SD210	A2	SD410	A2	SD510	A2
1.5	(1.1)	SD215Y	B1	SD215	A3	SD415	A3		
2	(1.5)	SD220Y	B2	SD220	A3	SD420	A3	SD520	A3
3	(2.2)	SD230Y	B2	SD230	A3	SD430	A3	SD530	B2
5	(3.7)	SD250Y	C1	SD250	B2	SD450	B2	SD550	B2
7.5	(5.5)			SD275	C1	SD475	C1	SD575	C1
10	(7.5)			SD2100	C1	SD4100	C1	SD5100	C1
15	(11)			SD2150	D1	SD4150	D1	SD5150	D1
20	(15)			SD2200	D1	SD4200	D1	SD5200	D1
25	(18.5)					SD4250	D1	SD5250	D1

TCF

HP	(kW)	208-240V 1Ø or 3Ø		208-240V 3Ø		400-480V 3Ø		480-590V 3Ø	
		Model#	Size	Model#	Size	Model#	Size	Model#	Size
0.5	(0.37)	TF205Y	A1			TF405	B1		
1	(0.75)	TF210Y	A2	TF210	A2	TF410	B1	TF510	B1
1.5	(1.1)	TF215Y	B1	TF215	A3	TF415	B1		
2	(1.5)	TF220Y	B2	TF220	B2	TF420	B2	TF520	B2
3	(2.2)	TF230Y	B2	TF230	B2	TF430	B2	TF530	B2
5	(4.0)			TF250	B2	TF450	B2	TF550	B2
7.5	(5.5)			TF275	C1	TF475	C1	TF575	C1
10	(7.5)			TF2100	C1	TF4100	C1	TF5100	C1

Sub-micro Options:

Remote Keypad: available for most models. Will meet NEMA 4 and 4X construction. Provides start/stop, forward/reverse, and speed control, as well as programming and monitoring.



Dynamic Braking Kit: Prepackaged resistor modules with control electronics provide easy mounting within the control cabinet.

CE Filters: Single and three phase footprint filters to meet CE standards (SCL has built-in).

DIN Rail Mounting: This option provides for easy mounting of the drive and DB option onto standard DIN rail. Unique design keeps mounting secure.

PI Set-point Control (SCF only).

High Frequency Output: 1,000Hz (SCF only).

Through-hole mounting: Sub-micro drives can be ordered for through-hole mounting, putting the heat sink outside the drive enclosure for better thermal management.

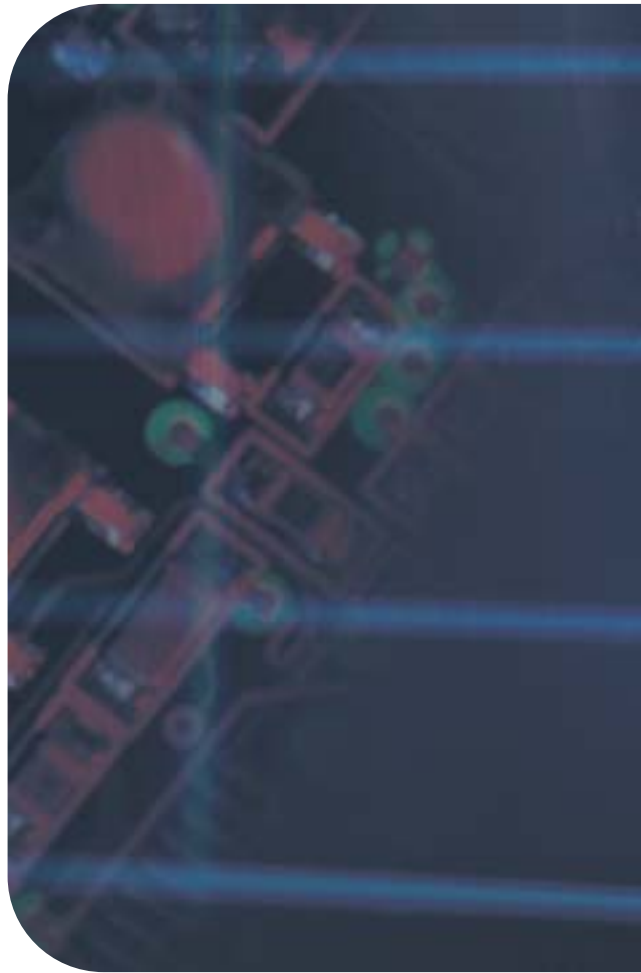
- Black anodized heat sink with gasket that will meet NEMA 4 and 4X construction!
- No fans or other electronics outside of the enclosure.



EPM Programmer: Program AC Tech Sub-Micro drives quickly using the 16 character English language display. The battery-powered Programmer allows you to:

- Copy one EPM in two seconds
- Store up to 30 programs
- Copy from a file to an EPM
- Edit and create programs
- Create and save programs on your PC using AC Tech's TechLink software





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