

# Sub-micro Drives

Flexible, simple, rugged, robust!



**Lenze**  
**AC Tech**

# Sub-micro Drives | Our promise

## Commitment to Price Leadership

Price leadership is serious business. It takes continuous life cycle management to make price leadership a sustainable strategy. We are always investigating techniques to improve efficiency and take advantage of the latest microprocessor and power module technology. When we achieve efficiency gains or material cost reductions, we pass those savings on to our customers. This simple philosophy has permitted us to build and maintain a very loyal base of customers.

## Commitment to Quality

Design quality is meticulously managed throughout our product's life cycle. Our design engineers are continuously monitoring new technology trends that increase product performance and component reliability. We never stop thinking about process improvements through automation. In fact, we have invested millions in automating our new state-of-the-art manufacturing facility. When you open any product box you will immediately see and feel the attention to every detail.

## Commitment to Innovation

We pride ourselves on delivering products to the market that are designed to meet specific customer needs. Our portfolio of innovative products is broad and covers very simple variable speed applications up through complex motion control. Each product is positioned so our customers pay only for the level of technology necessary for their application.

## Commitment to Simplicity

One of the cornerstones of our design philosophy is to make our products simple to use. Technology only benefits the user if it can be easily understood and applied. Each product is designed to dramatically simplify installation, commissioning and operation for our customers.

## Commitment to Performance

Each Lenze/AC Tech product is in a class by itself when it comes to performance. We are not satisfied with average performance. Our products do not reach the marketplace unless they outperform our competitors and exceed our strict performance requirements. By working closely with our component vendors, we are able to provide that performance for a great value.

## Our Promise

At AC Tech it is not good enough to deliver part of a promise. Our products deliver the entire package; Price Leadership, Quality, Innovation, Simplicity and Performance.



**AC Variable Frequency Drives | Servo Drives & Motors | Gear Reducers | Integral Gear**

# Sub-micro Drives

## Models and Features



### 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.

### SCD: With DeviceNet

If your system operates on the DeviceNet network, the SCD gives you full control. You can configure the drive using the Electronic Data sheet (EDS) and the AC Drives Profile is supported. Communicate at 125k, 250k or 500k bps. Since DeviceNet is built into the SCD (not an optional module), you do not lose the drive display or require additional panel space.

### TCF: Sensorless Vector

For constant torque applications that operate at low speeds, the TCF Series will provide full motor torque below 1Hz, that's less than 30 RPM for a standard 4-pole motor! The TCF can be configured for standard volts/hertz operation or "enhanced" volts/hertz mode (by using the Auto-tune feature) or vector mode. In vector mode, the TCF can be configured for either speed or torque operation.

### EPM: The "Blue Chip" investment

The Electronic Programmable Module or EPM makes your investment in AC Technology Sub-micro drives an even better value. The EPM allows you to copy a program from one AC Tech Sub-micro drive to another in less than two seconds with the optional EPM Programmer, and does not require the drive to be powered to perform the operation! This feature gives you the option to program AC Tech Sub-micro drives wherever it best fits your manufacturing process.

The EPM allows an Original Equipment Manufacturer's factory parameters to become the drive's default parameters, providing a safe backup for the OEM's machines.

Last but not least, if your machine operates in several modes or processes different product, requiring the drive to be reprogrammed, you save time and eliminate errors by using AC Tech Sub-micro drives and switching pre-programmed EPMs as needed.

IP 20 "Contactor" style enclosure with power terminals on 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 external relay(s)	
Up to 8 selectable preset speeds		
	Modbus Communication	DeviceNet Communication
Isolated start/stop plus three programmable inputs		Modbus Communication
DC injection braking on stop (up to 1 hour)		Continuous DC injection braking
	Analog outputs of speed and load	Analog outputs of speed and load

### Sub-micro Available 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 2 seconds
- Store up to 30 programs
- Copy from file to an EPM
- Edit and create programs
- Create and save programs on your PC using AC Tech's TechLink software



# Sub-micro Drives

# Features and Specifications

## SCM

HP	kW	120V 1Ø		208-240V 1Ø		208-240V 3Ø		400-480V 3Ø	
		Model#	Size	Model#	Size	Model#	Size	Model	Size
0.33	0.25	SM004S	A5	SM204S	A5				
0.5	0.37	SM005S	A5	SM205S	A5	SM205	A5	SM405	A1
0.75	0.55			SM208S	A6				
1	0.75	SM010S	B5	SM210S	A6	SM210	A6	SM410	A2
1.5	1.1	SM015S	B5	SM215S	B5	SM215	A7	SM415	A3
2	1.5			SM220S	B5	SM220	A7	SM420	A3
3	2.2			SM230S	B6	SM230	B6	SM430	B1
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

## 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	4.0	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		

## 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	4.0	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
30	22					SD4300	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

## SCL

HP	kW	208-240V 1Ø	
		Model#	Size
0.33	0.25	SL204S	A5
0.5	0.37	SL205S	A5
0.75	0.55	SL208S	A6
1	0.75	SL210S	A6
1.5	1.1	SL215S	B5
2	1.5	SL220S	B5
3	2.2	SL230S	B6

## 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

## Dimensions Key:

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	96	5.24	133
B2	5.75	146	3.76	96	6.74	171
B5	5.75	146	3.76	96	4.88	124
B6	5.75	146	3.76	96	5.53	140
C1	7.75	197	5.02	128	7.18	182
D1	9.75	248	6.68	170	8.00	203

# Worldwide Coverage

## Our Locations:

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