



Title: EM2/EM1 Comparison Chart

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Version: 5.0

## EM2 (1", 2" and Linear)

| Resolution   | Min. | Max.  |
|--------------|------|-------|
| CPR          | 2000 | 10000 |
| LPI (linear) | 1000 | 2000  |

| Parameter            | Min. | Max.                            | Units    | Notes                                                                              |
|----------------------|------|---------------------------------|----------|------------------------------------------------------------------------------------|
| Temperature          | -25  | 100                             | C        |                                                                                    |
| A/B Output Frequency | 0    | 360                             | kHz      | 2000, 2048, 2500 CPR (1")<br>3600, 4000, 4096, 5000 CPR (2")<br>1000 LPI (Linear)  |
|                      | 0    | 720                             | kHz      | 4000, 4096, 5000 CPR (1")<br>7200, 8000, 8192, 10000 CPR (2")<br>2000 LPI (Linear) |
| Disk RPM             | 0    | (21.6 x 10 <sup>6</sup> ) / CPR | RPM      | 2000, 2048, 2500 CPR (1")<br>3600, 4000, 4096, 5000 CPR (2")                       |
|                      | 0    | (43.2 x 10 <sup>6</sup> ) / CPR | RPM      | 4000, 4096, 5000 CPR (1")<br>7200, 8000, 8192, 10000 CPR (2")                      |
| Linear Strip Speed   | 0    | 360                             | in./sec. | 1000, 2000 LPI (linear)                                                            |

## EM1

| Resolution   | Min. | Max. |
|--------------|------|------|
| CPR          | 32   | 2500 |
| LPI (linear) | 120  | 500  |

| Parameter            | Min. | Max.                          | Units    | Notes |
|----------------------|------|-------------------------------|----------|-------|
| Temperature          | -40  | 125                           | C        |       |
| A/B Output Frequency | 0    | 300                           | kHz      |       |
|                      |      |                               |          |       |
| Disk RPM             | 0    | (18 x 10 <sup>6</sup> ) / CPR | RPM      |       |
|                      |      |                               |          |       |
| Linear Strip Speed   | 0    | (3 x 10 <sup>5</sup> ) / LPI  | in./sec. |       |

## EM2 (1", 2" and Linear)

| Parameter                             | Min. | Typ. | Max. | Units | Conditions              |
|---------------------------------------|------|------|------|-------|-------------------------|
| Supply Voltage                        | 4.5  | 5.0  | 5.5  | V     |                         |
| Supply Current, EM2-1- (1" disk)      |      | 72   | 85   | mA    | no load                 |
|                                       |      |      |      |       |                         |
| Supply Current, EM2-2- (2" disk)      |      | 72   | 85   | mA    | no load                 |
|                                       |      |      |      |       |                         |
| Supply Current, EM2-0- (linear strip) |      | 72   | 85   | mA    | no load                 |
|                                       |      |      |      |       |                         |
| High-level Output                     | 2    |      |      | V     | I <sub>OH</sub> = -5 mA |
|                                       |      | 3.5  |      | V     | no load                 |
| Low-level Output                      |      |      | 0.5  | V     | I <sub>OL</sub> = 5 mA  |
|                                       |      | 0.25 |      | V     | no load                 |
| Output Current Per Channel            | -5   |      | 5    | mA    |                         |
| Output Rise Time                      |      | 50   |      | nS    | ± 5 mA load             |
| Output Fall Time                      |      | 50   |      | nS    | ± 5 mA load             |

| Parameter                            | Symbol | Min. | Typ. | Max. | Units              |
|--------------------------------------|--------|------|------|------|--------------------|
| Symmetry                             | X, Y   | 150  | 190  | 245  | electrical degrees |
| Quadrature                           | Z      | 60   | 90   | 125  | electrical degrees |
| Index Pulse Width                    | Po     | 60   | 95   | 125  | electrical degrees |
| Ch. I Rise After Ch. B or Ch. A Fall | t1     |      | -40  |      | ns                 |
| Ch. I Fall After Ch. B or Ch. A Rise | t2     |      | 25   |      | ns                 |

## EM1

| Parameter                             | Min. | Typ. | Max. | Units | Conditions                  |
|---------------------------------------|------|------|------|-------|-----------------------------|
| Supply Voltage                        | 4.5  | 5.0  | 5.5  | V     |                             |
| Supply Current, EM1-1- (1" disk)      |      | 27   | 33   | mA    | CPR < 500, no load          |
|                                       |      | 50   | 62   | mA    | CPR ≥ 500, no load          |
| Supply Current, EM1-2- (2" disk)      |      | 27   | 33   | mA    | CPR < 1000, no load         |
|                                       |      | 50   | 62   | mA    | CPR ≥ 1000, no load         |
| Supply Current, EM1-0- (linear strip) |      | 27   | 33   | mA    | LPI < 300, no load          |
|                                       |      | 54   | 62   | mA    | LPI ≥ 300, no load          |
| High-level Output                     | 2    |      |      | V     | I <sub>OH</sub> = -8mA max. |
|                                       |      | 4.8  |      | V     | no load                     |
| Low-level Output                      |      |      | 0.5  | V     | I <sub>OL</sub> = 8mA max.  |
|                                       |      | 0.05 |      | V     | no load                     |
| Output Current Per Channel            | -8   |      | 8    | mA    |                             |
| Output Rise Time                      |      | 110  |      | nS    |                             |
| Output Fall Time                      |      | 100  |      | nS    |                             |

| Parameter                            | Symbol | Min. | Typ. | Max. | Units              |
|--------------------------------------|--------|------|------|------|--------------------|
| Symmetry                             | X, Y   | 150  | 180  | 210  | electrical degrees |
| Quadrature                           | Z      | 60   | 90   | 120  | electrical degrees |
| Index Pulse Width                    | Po     | 60   | 90   | 120  | electrical degrees |
| Ch. I Rise After Ch. B or Ch. A Fall | t1     | 10   | 100  | 250  | ns                 |
| Ch. I Fall After Ch. B or Ch. A Rise | t2     | 70   | 150  | 300  | ns                 |

## We are here for you. Addresses and Contacts.

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### Headquarter Switzerland:

Angst+Pfister Sensors and Power AG  
Thurgauerstrasse 66  
CH-8050 Zurich

Phone +41 44 877 35 00  
[sensorsandpower@angst-pfister.com](mailto:sensorsandpower@angst-pfister.com)

### Office Germany:

Angst+Pfister Sensors and Power Deutschland GmbH  
Edisonstraße 16  
D-85716 Unterschleißheim

Phone +49 89 374 288 87 00  
[sensorsandpower.de@angst-pfister.com](mailto:sensorsandpower.de@angst-pfister.com)

### Office North America:

Angst+Pfister North America Inc.  
10391 Brecksville Rd.  
Brecksville, OH 44141

Phone +1 440 375-5212  
[info.apus@angst-pfister.com](mailto:info.apus@angst-pfister.com)

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