

## How to connect the new SXR/GXR Motor family with the FDS Motion and Speed Controllers

### Summary

The new FDS DC-Motor families SXR/GXR offer different combination possibilities with FDS Speed Controllers and Motion Controllers.

| Motor    | Encoder       | Speed Controller |           |           | Motion Controller |           |           |           | PWM Filter<br>required (y/n) |
|----------|---------------|------------------|-----------|-----------|-------------------|-----------|-----------|-----------|------------------------------|
|          |               | SC 1801 S        | SC 2804 S | SC 5008 S | MC 3001 B         | MC 3602 B | MC 3603 S | MC 5005 S |                              |
| 1218 SXR | IEP3-4096     | x                | x         |           | x                 |           |           |           | y                            |
| 1228 SXR | IEP3-4096     | x                | x         |           | x                 |           |           |           | y                            |
| 1424 SXR | IEP3-4096     | x                | x         |           | x                 | x         | x         |           | y                            |
| 1437 SXR | IEP3-4096     | x                | x         |           | x                 | x         | x         |           | y                            |
| 1627 SXR | IEX3-4096 / L | x                | x         |           | x                 | x         | x         |           | y                            |
| 1437 GXR | IEP3-4096     | x                | x         |           | x                 | x         | x         |           | n                            |
| 1627 GXR | IEX3-4096 / L | x                | x         |           | x                 | x         | x         |           | n                            |

This application note gives, for each possible combination, the suggested electrical connection between the motor unit and the controller both using an intermediate adapter and, if possible, with a direct connection.

Other connection solutions could also be possible, in case of specific requirements pls. contact our sales.

In the following chapters, for each connection solution, the following information is given:

- Products and accessories (motor and option; encoder and option; adapter and PWM filter; SC/MC);
- Electrical connection diagram and cable pin-out (if the cable does not have a connector);
- Drawing of the adapter(s) or of the controller in case of direct connection.

For any additional details regarding product and options please refer to our datasheets, as published on our website [www.faulhaber.com](http://www.faulhaber.com), in case of specific requirements pls. contact our sales.

## Speed Controllers

### SXR/GXR + IEP3/IEX3 (L) + SC 1801 S, with Adapter Board (acting as PWM Filter)

| Motor    | Encoder     | Speed Controller |           |           | Motion Controller |           |           |           | PWM Filter<br>required (y/n) |
|----------|-------------|------------------|-----------|-----------|-------------------|-----------|-----------|-----------|------------------------------|
|          |             | SC 1801 S        | SC 2804 S | SC 5008 S | MC 3001 B         | MC 3602 B | MC 3603 S | MC 5005 S |                              |
| 1218 SXR | IEP3-4096   | x                | x         |           | x                 |           |           |           | y                            |
| 1228 SXR | IEP3-4096   | x                | x         |           | x                 |           |           |           | y                            |
| 1424 SXR | IEP3-4096   | x                | x         |           | x                 | x         | x         |           | y                            |
| 1437 SXR | IEP3-4096   | x                | x         |           | x                 | x         | x         |           | y                            |
| 1627 SXR | IEX3-4096/L | x                | x         |           | x                 | x         | x         |           | y                            |
| 1437 GXR | IEP3-4096   | x                | x         |           | x                 | x         | x         |           | n                            |
| 1627 GXR | IEX3-4096/L | x                | x         |           | x                 | x         | x         |           | n                            |

#### a. Products and accessories

##### Encoders without Line Driver

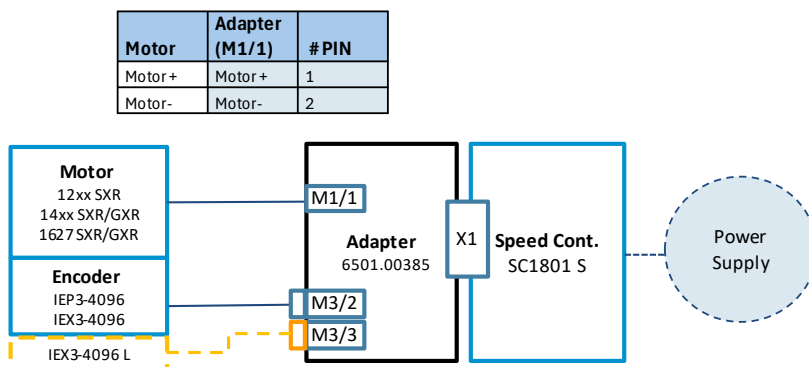
| Motor        | Motor Option #               | Option Description       | Encoder   | Enc. Opt. # | Option Description                         | Adapter    | SC       |
|--------------|------------------------------|--------------------------|-----------|-------------|--------------------------------------------|------------|----------|
| 1218 SXR     | K4585                        | Twin Leads w/o connector | IEP3-4096 | K4456       | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6501.00385 | SC1801 S |
| 1228 SXR     | K4585                        | Twin Leads w/o connector | IEP3-4096 | K4456       | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6501.00385 | SC1801 S |
| 1424 SXR     | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEP3-4096 | K4456       | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6501.00385 | SC1801 S |
| 1437 SXR/GXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEP3-4096 | K4456       | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6501.00385 | SC1801 S |
| 1627 SXR/GXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEX3-4096 | 7953        | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6501.00385 | SC1801 S |

##### Encoders with Line Driver

| Motor        | Motor Option #               | Option Description       | Encoder    | Enc. Opt. # | Option Description                         | Adapter    | SC       |
|--------------|------------------------------|--------------------------|------------|-------------|--------------------------------------------|------------|----------|
| 1627 SXR/GXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEX3-4096L | 7957        | Ribbon Cable w. MOLEX picoblade 51021-1000 | 6501.00385 | SC1801 S |

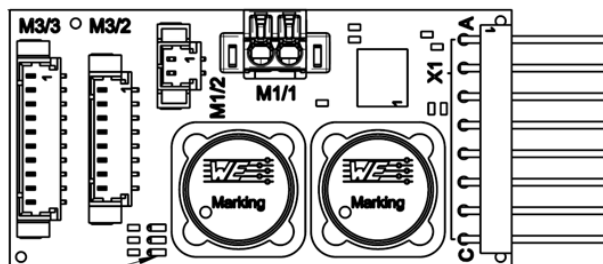
<sup>(1)</sup> Option 7936, single leads PTFE is also applicable. Option Y7935 can be omitted (being the std. for combination with Encoder).

#### b. Connection Diagram and Pin-Out



#### c. Drawing of the adapter

Adapter 6501.00385



For SXR motors, the Adapter acts as PWM Filter.

## GXR + IEX3 + SC 1801 S, direct connection (not suitable for SXR motors)

| Motor    | Encoder       | Speed Controller |           |           | Motion Controller |           |           |           | PWM Filter required (y/n) |
|----------|---------------|------------------|-----------|-----------|-------------------|-----------|-----------|-----------|---------------------------|
|          |               | SC 1801 S        | SC 2804 S | SC 5008 S | MC 3001 B         | MC 3602 B | MC 3603 S | MC 5005 S |                           |
| 1218 SXR | IEX3-4096     | x                | x         |           | x                 |           |           |           | y                         |
| 1228 SXR | IEX3-4096     | x                | x         |           | x                 |           |           |           | y                         |
| 1424 SXR | IEX3-4096     | x                | x         |           | x                 | x         | x         |           | y                         |
| 1437 SXR | IEX3-4096     | x                | x         |           | x                 | x         | x         |           | y                         |
| 1627 SXR | IEX3-4096 / L | x                | x         |           | x                 | x         | x         |           | y                         |
| 1437 GXR | IEX3-4096     | x                | x         |           | x                 | x         | x         |           | n                         |
| 1627 GXR | IEX3-4096 / L | x                | x         |           | x                 | x         | x         |           | n                         |

### a. Products and accessories

#### Encoders without Line Driver

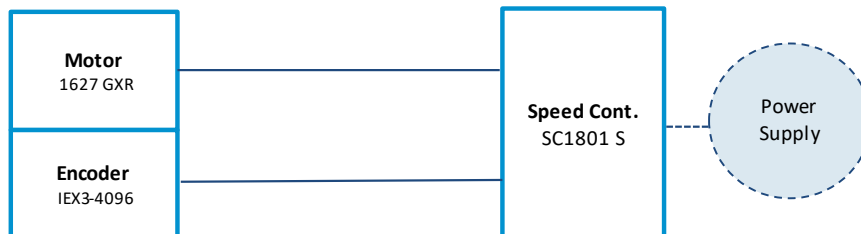
| Motor    | Motor Option #               | Option Description       | Encoder                | Enc. Opt. # | Option Description              | Adapter | SC       |
|----------|------------------------------|--------------------------|------------------------|-------------|---------------------------------|---------|----------|
| 1627 GXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEX3-4096 <sup>2</sup> | 7955        | Single Leads PTFE w/o connector | None    | SC1801 S |

(1) Option 7936, single leads PTFE is also applicable. Option Y7935 can be omitted (being the std. for combination with Encoder).

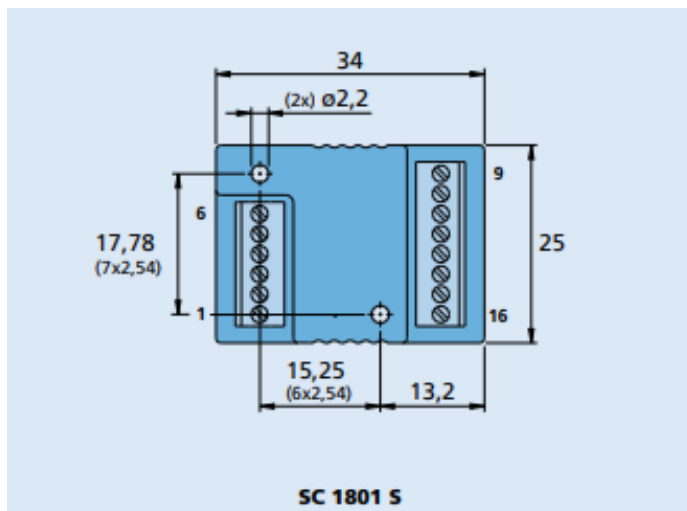
(2) IEX3-4096 L can also be used not connecting the inverse signals

### b. Connection Diagram and Pin-Out

| Motor     | SC     | # PIN |
|-----------|--------|-------|
| -         | Mot C  | 9     |
| Motor-    | Mot B  | 10    |
| Motor+    | Mot A  | 11    |
| Encoder   | SC     | # PIN |
| GND       | SGND   | 12    |
| Ucc       | Vcc    | 13    |
| Channel B | Sens C | 14    |
| Channel A | Sens B | 15    |
| -         | Sens A | 16    |



### c. Drawing of the SC



## SXR/GXR + IEP3/IEX3 (L) + SC 2804 S, with Adapter Board (acting as PWM Filter for applications with current $\leq 1,8A$ )

| Motor    | Encoder       | Speed Controller |           |           | Motion Controller |           |           |           | PWM Filter required (y/n) |
|----------|---------------|------------------|-----------|-----------|-------------------|-----------|-----------|-----------|---------------------------|
|          |               | SC 1801 S        | SC 2804 S | SC 5008 S | MC 3001 B         | MC 3602 B | MC 3603 S | MC 5005 S |                           |
| 1218 SXR | IEP3-4096     | x                | x         |           | x                 |           |           |           | y                         |
| 1228 SXR | IEP3-4096     | x                | x         |           | x                 |           |           |           | y                         |
| 1424 SXR | IEP3-4096     | x                | x         |           | x                 | x         | x         |           | y                         |
| 1437 SXR | IEP3-4096     | x                | x         |           | x                 | x         | x         |           | y                         |
| 1627 SXR | IEX3-4096 / L | x                | x         |           | x                 | x         | x         |           | y                         |
| 1437 GXR | IEP3-4096     | x                | x         |           | x                 | x         | x         |           | n                         |
| 1627 GXR | IEX3-4096 / L | x                | x         |           | x                 | x         | x         |           | n                         |

### a. Products and accessories

#### Encoders without Line Driver

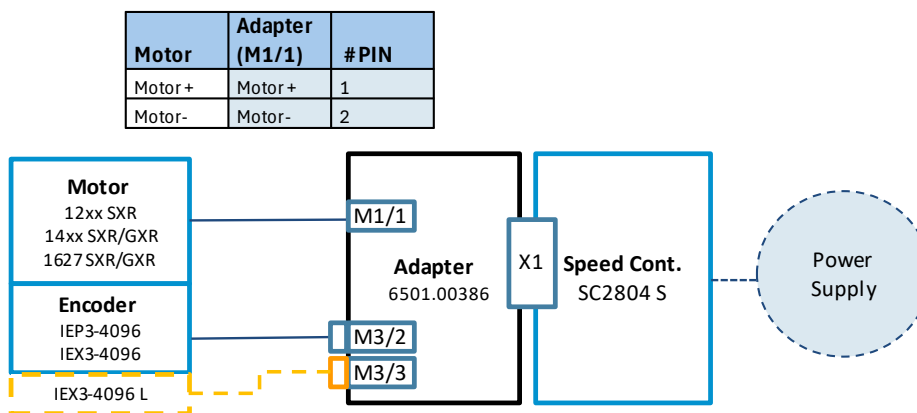
| Motor        | Motor Option #               | Option Description       | Encoder   | Enc. Opt. # | Option Description                         | Adapter    | SC       |
|--------------|------------------------------|--------------------------|-----------|-------------|--------------------------------------------|------------|----------|
| 1218 SXR     | K4585                        | Twin Leads w/o connector | IEP3-4096 | K4456       | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6501.00386 | SC2804 S |
| 1228 SXR     | K4585                        | Twin Leads w/o connector | IEP3-4096 | K4456       | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6501.00386 | SC2804 S |
| 1424 SXR     | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEP3-4096 | K4456       | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6501.00386 | SC2804 S |
| 1437 SXR/GXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEP3-4096 | K4456       | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6501.00386 | SC2804 S |
| 1627 SXR/GXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEX3-4096 | 7953        | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6501.00386 | SC2804 S |

#### Encoders with Line Driver

| Motor        | Motor Option #               | Option Description       | Encoder    | Enc. Opt. # | Option Description                         | Adapter    | SC       |
|--------------|------------------------------|--------------------------|------------|-------------|--------------------------------------------|------------|----------|
| 1627 SXR/GXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEX3-4096L | 7957        | Ribbon Cable w. MOLEX picoblade 51021-1000 | 6501.00386 | SC2804 S |

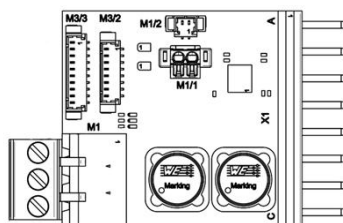
(<sup>1</sup>) Option 7936, single leads PTFE is also applicable. Option Y7935 can be omitted (being the std. for combination with Encoder).

### b. Connection Diagram and Pin-Out



### c. Drawing of the adapter

Adapter 6501.00386



For SXR motors, the Adapter acts as PWM Filter.

## GXR + IEX3 + SC 2804 S, direct connection (not suitable for SXR motors)

| Motor    | Encoder       | Speed Controller |           |           | Motion Controller |           |           |           | PWM Filter required (y/n) |
|----------|---------------|------------------|-----------|-----------|-------------------|-----------|-----------|-----------|---------------------------|
|          |               | SC 1801 S        | SC 2804 S | SC 5008 S | MC 3001 B         | MC 3602 B | MC 3603 S | MC 5005 S |                           |
| 1218 SXR | IEX3-4096     | x                | x         |           | x                 |           |           |           | y                         |
| 1228 SXR | IEX3-4096     | x                | x         |           | x                 |           |           |           | y                         |
| 1424 SXR | IEX3-4096     | x                | x         |           | x                 | x         | x         |           | y                         |
| 1437 SXR | IEX3-4096     | x                | x         |           | x                 | x         | x         |           | y                         |
| 1627 SXR | IEX3-4096 / L | x                | x         |           | x                 | x         | x         |           | y                         |
| 1437 GXR | IEX3-4096     | x                | x         |           | x                 | x         | x         |           | n                         |
| 1627 GXR | IEX3-4096 / L | x                | x         |           | x                 | x         | x         |           | n                         |

### a. Products and accessories

#### Encoders without Line Driver

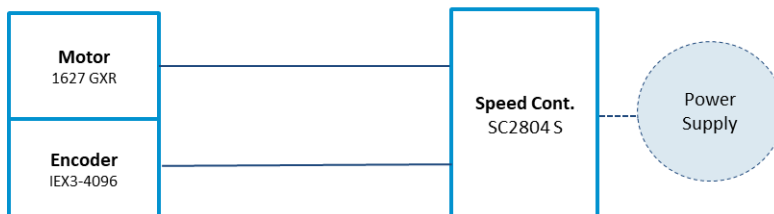
| Motor    | Motor Option #               | Option Description       | Encoder   | Enc. Opt. # | Option Description              | Adapter | SC       |
|----------|------------------------------|--------------------------|-----------|-------------|---------------------------------|---------|----------|
| 1627 GXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEX3-4096 | 7955        | Single Leads PTFE w/o connector | None    | SC2804 S |

<sup>(1)</sup> Option 7936, single leads PTFE is also applicable. Option Y7935 can be omitted (being the std. for combination with Encoder).

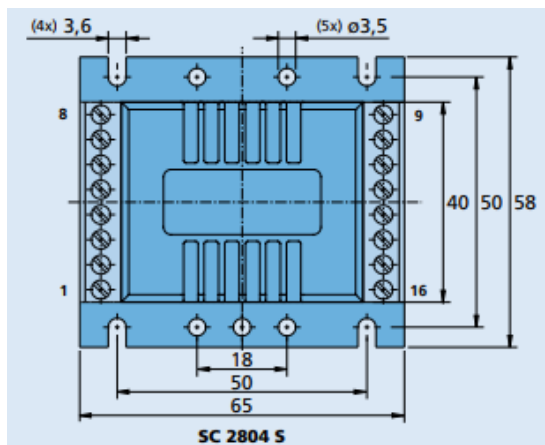
Note: IEX3 L can also be used not connecting the inverse signals

### b. Connection Diagram and Pin-Out

| Motor     | SC     | # PIN |
|-----------|--------|-------|
| -         | Mot C  | 9     |
| Motor -   | Mot B  | 10    |
| Motor +   | Mot A  | 11    |
| Encoder   | SC     | # PIN |
| GND       | SGND   | 12    |
| Ucc       | Vcc    | 13    |
| Channel B | Sens C | 14    |
| Channel A | Sens B | 15    |
| -         | Sens A | 16    |



### c. Drawing of the SC



## Motion Controllers

### SXR/GXR + IEP3/IEX3 (L) + MC 3001 B, with Adapter Board (acting as PWM Filter)

| Motor    | Encoder     | Speed Controller |           |           | Motion Controller |           |           |           | PWM Filter<br>required (y/n) |
|----------|-------------|------------------|-----------|-----------|-------------------|-----------|-----------|-----------|------------------------------|
|          |             | SC 1801 S        | SC 2804 S | SC 5008 S | MC 3001 B         | MC 3602 B | MC 3603 S | MC 5005 S |                              |
| 1218 SXR | IEP3-4096   | x                | x         |           | x                 |           |           |           | y                            |
| 1228 SXR | IEP3-4096   | x                | x         |           | x                 |           |           |           | y                            |
| 1424 SXR | IEP3-4096   | x                | x         |           | x                 | x         | x         |           | y                            |
| 1437 SXR | IEP3-4096   | x                | x         |           | x                 | x         | x         |           | y                            |
| 1627 SXR | IEX3-4096/L | x                | x         |           | x                 | x         | x         |           | y                            |
| 1437 GXR | IEP3-4096   | x                | x         |           | x                 | x         | x         |           | n                            |
| 1627 GXR | IEX3-4096/L | x                | x         |           | x                 | x         | x         |           | n                            |

#### a. Products and accessories

##### Encoders without Line Driver

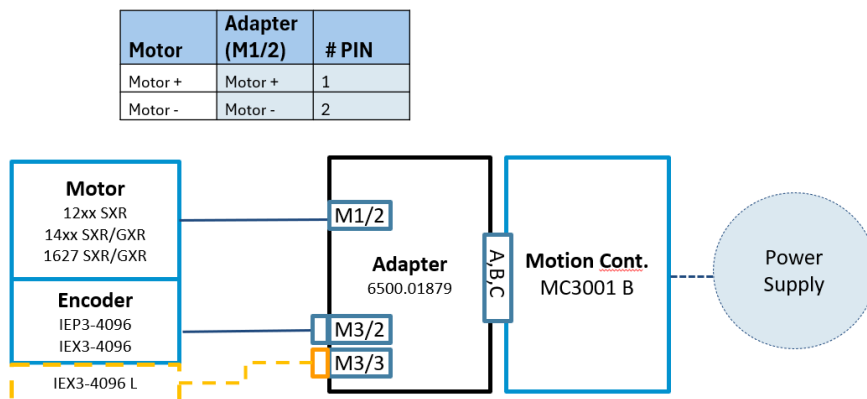
| Motor        | Motor Option #               | Option Description       | Encoder   | Enc. Opt. # | Option Description                         | Adapter    | MC       |
|--------------|------------------------------|--------------------------|-----------|-------------|--------------------------------------------|------------|----------|
| 1218 SXR     | K4585                        | Twin Leads w/o connector | IEP3-4096 | K4456       | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6500.01879 | MC3001 B |
| 1228 SXR     | K4585                        | Twin Leads w/o connector | IEP3-4096 | K4456       | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6500.01879 | MC3001 B |
| 1424 SXR     | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEP3-4096 | K4456       | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6500.01879 | MC3001 B |
| 1437 SXR/GXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEP3-4096 | K4456       | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6500.01879 | MC3001 B |
| 1627 SXR/GXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEX3-4096 | 7953        | Ribbon Cable w. MOLEX picoblade 51021-0800 | 6500.01879 | MC3001 B |

##### Encoders with Line Driver

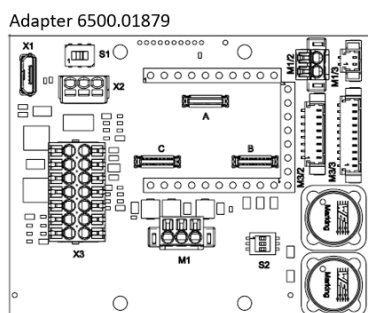
| Motor        | Motor Option #               | Option Description       | Encoder    | Enc. Opt. # | Option Description                         | Adapter    | MC       |
|--------------|------------------------------|--------------------------|------------|-------------|--------------------------------------------|------------|----------|
| 1627 SXR/GXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEX3-4096L | 7957        | Ribbon Cable w. MOLEX picoblade 51021-1000 | 6500.01879 | MC3001 B |

<sup>(1)</sup> Option 7936, single leads PTFE is also applicable. Option Y7935 can be omitted (being the std. for combination with Encoder).

#### b. Connection Diagram and Pin-Out



#### c. Drawing of the Adapter and additional PWM Filter



For SXR motors, the Adapter acts as PWM Filter.



## GXR+ IEP3/IEX3 (L) + MC 3602 B, with Adapter Board but w/o PWM Filter (not suitable for SXR motors)

| Motor    | Encoder     | Speed Controller |           |           | Motion Controller |           |           |           | PWM Filter required (y/n) |
|----------|-------------|------------------|-----------|-----------|-------------------|-----------|-----------|-----------|---------------------------|
|          |             | SC 1801 S        | SC 2804 S | SC 5008 S | MC 3001 B         | MC 3602 B | MC 3603 S | MC 5005 S |                           |
| 1218 SXR | IEP3-4096   | x                | x         |           | x                 |           |           |           | y                         |
| 1228 SXR | IEP3-4096   | x                | x         |           | x                 |           |           |           | y                         |
| 1424 SXR | IEP3-4096   | x                | x         |           | x                 | x         | x         |           | y                         |
| 1437 SXR | IEP3-4096   | x                | x         |           | x                 | x         | x         |           | y                         |
| 1627 SXR | IEX3-4096/L | x                | x         |           | x                 | x         | x         |           | y                         |
| 1437 GXR | IEP3-4096   | x                | x         |           | x                 | x         | x         |           | n                         |
| 1627 GXR | IEX3-4096/L | x                | x         |           | x                 | x         | x         |           | n                         |

### a. Products and accessories

#### Encoders without Line Driver

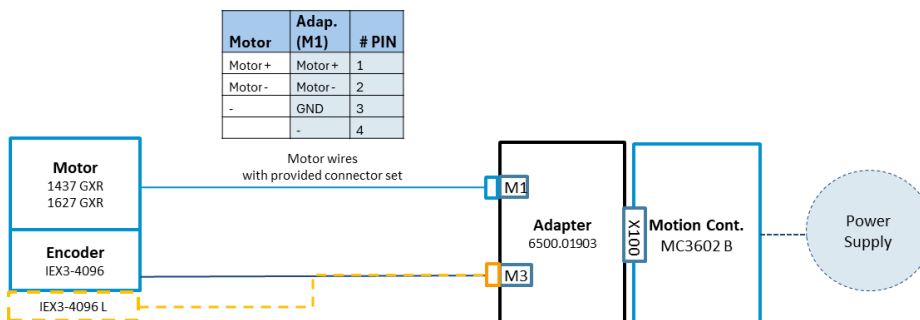
| Motor    | Motor Option #               | Option Description       | Encoder   | Enc. Opt. # | Option Description                    | Adapter    | MC       |
|----------|------------------------------|--------------------------|-----------|-------------|---------------------------------------|------------|----------|
| 1437 GXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEP3-4096 | K4806       | Cable w. MOLEX 8p. microfit connector | 6500.01903 | MC3602 B |
| 1627 GXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEX3-4096 | 7979        | Cable w. MOLEX 8p. microfit connector | 6500.01903 | MC3602 B |

#### Encoders with Line Driver

| Motor    | Motor Option #               | Option Description       | Encoder     | Enc. Opt. # | Option Description                    | Adapter    | MC       |
|----------|------------------------------|--------------------------|-------------|-------------|---------------------------------------|------------|----------|
| 1627 GXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEX3-4096 L | 7981        | Cable w. MOLEX 8p. microfit connector | 6500.01903 | MC3602 B |

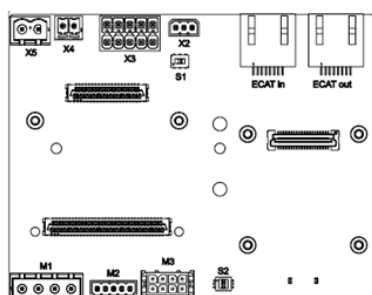
<sup>(1)</sup> Option 7936, single leads PTFE is also applicable. Option Y7935 can be omitted (being the std. for combination with Encoder).

### b. Connection Diagram and Pin-Out



### c. Drawing of the Adapter and additional PWM Filter

#### Adapter 6500.01903



## SXR+ IEP3/IEX3 (L) + MC 3603 S, with PWM Filter

| Motor    | Encoder       | Speed Controller |           |           | Motion Controller |           |           |           | PWM Filter required (y/n) |
|----------|---------------|------------------|-----------|-----------|-------------------|-----------|-----------|-----------|---------------------------|
|          |               | SC 1801 S        | SC 2804 S | SC 5008 S | MC 3001 B         | MC 3602 B | MC 3603 S | MC 5005 S |                           |
| 1218 SXR | IEP3-4096     | x                | x         |           | x                 |           |           |           | y                         |
| 1228 SXR | IEP3-4096     | x                | x         |           | x                 |           |           |           | y                         |
| 1424 SXR | IEP3-4096     | x                | x         |           | x                 | x         | x         |           | y                         |
| 1437 SXR | IEP3-4096     | x                | x         |           | x                 | x         | x         |           | y                         |
| 1627 SXR | IEX3-4096 / L | x                | x         |           | x                 | x         | x         |           | y                         |
| 1437 GXR | IEP3-4096     | x                | x         |           | x                 | x         | x         |           | n                         |
| 1627 GXR | IEX3-4096 / L | x                | x         |           | x                 | x         | x         |           | n                         |

### a. Products and accessories

#### Encoders without Line Driver

| Motor    | Motor Option #               | Option Description       | Encoder   | Enc. Opt. # | Option Description                    | Adapter                              | MC       |
|----------|------------------------------|--------------------------|-----------|-------------|---------------------------------------|--------------------------------------|----------|
| 1424 SXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEP3-4096 | K4806       | Cable w. MOLEX 8p. microfit connector | 6501.00357 + 6501.00362 <sup>2</sup> | MC3603 S |
| 1437 SXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEP3-4096 | K4806       | Cable w. MOLEX 8p. microfit connector | 6501.00357 + 6501.00362 <sup>2</sup> | MC3603 S |
| 1627 SXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEX3-4096 | 7979        | Cable w. MOLEX 8p. microfit connector | 6501.00357 + 6501.00362 <sup>2</sup> | MC3603 S |

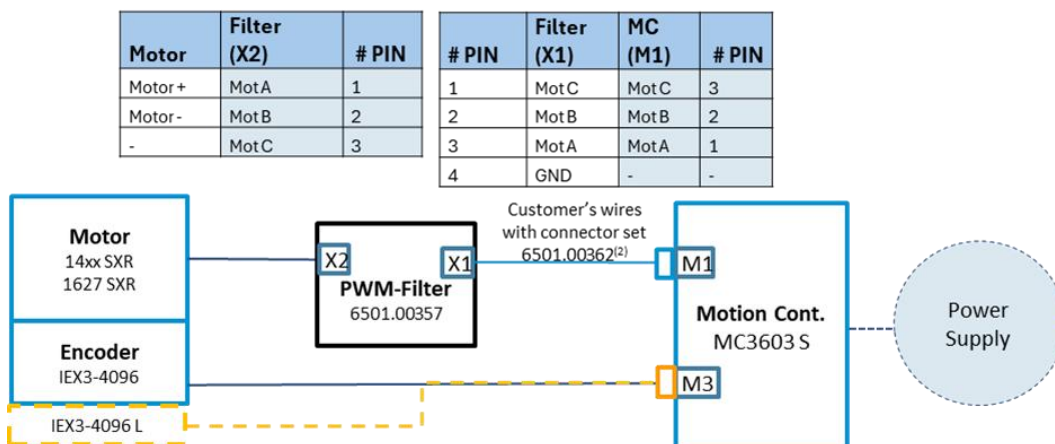
#### Encoders with Line Driver

| Motor    | Motor Option #               | Option Description       | Encoder    | Enc. Opt. # | Option Description                    | Adapter                              | MC       |
|----------|------------------------------|--------------------------|------------|-------------|---------------------------------------|--------------------------------------|----------|
| 1627 SXR | 7935 (X/Y/Z/XX) <sup>1</sup> | Twin Leads w/o connector | IEX3-4096L | 7981        | Cable w. MOLEX 8p. microfit connector | 6501.00357 + 6501.00362 <sup>2</sup> | MC3603 S |

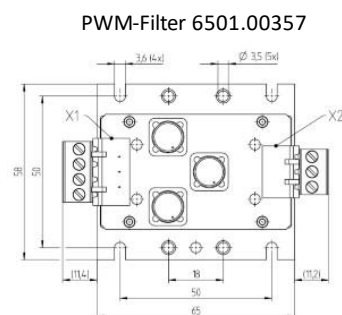
(1) Option 7936, single leads PTFE is also applicable. Option Y7935 can be omitted (being the std. for combination with Encoder).

(2) Connector Set 6501.00362 not provided, to be bought separately

### b. Connection Diagram and Pin-Out



### c. Drawing of the PWM Filter



## GXR+ IEP3/IEX3 (L) + MC 3603 S, direct connection

| Motor    | Encoder       | Speed Controller |           |           | Motion Controller |           |           |           | PWM Filter required (y/n) |
|----------|---------------|------------------|-----------|-----------|-------------------|-----------|-----------|-----------|---------------------------|
|          |               | SC 1801 S        | SC 2804 S | SC 5008 S | MC 3001 B         | MC 3602 B | MC 3603 S | MC 5005 S |                           |
| 1218 SXR | IEP3-4096     | x                | x         |           | x                 |           |           |           | y                         |
| 1228 SXR | IEP3-4096     | x                | x         |           | x                 |           |           |           | y                         |
| 1424 SXR | IEP3-4096     | x                | x         |           | x                 | x         | x         |           | y                         |
| 1437 SXR | IEP3-4096     | x                | x         |           | x                 | x         | x         |           | y                         |
| 1627 SXR | IEX3-4096 / L | x                | x         |           | x                 | x         | x         |           | y                         |
| 1437 GXR | IEP3-4096     | x                | x         |           | x                 | x         | x         |           | n                         |
| 1627 GXR | IEX3-4096 / L | x                | x         |           | x                 | x         | x         |           | n                         |

### a. Products and accessories

#### Encoders without Line Driver

| Motor    | Motor Option #    | Option Description                    | Encoder   | Enc. Opt. # | Option Description                    | Adapter | MC       |
|----------|-------------------|---------------------------------------|-----------|-------------|---------------------------------------|---------|----------|
| 1437 GXR | 7937 <sup>1</sup> | Cables (2 wires) with Phoenix 1012267 | IEP3-4096 | K4806       | Cable w. MOLEX 8p. microfit connector | -       | MC3603 S |
| 1627 GXR | 7937 <sup>1</sup> | Cables (2 wires) with Phoenix 1012267 | IEX3-4096 | 7979        | Cable w. MOLEX 8p. microfit connector | -       | MC3603 S |

#### Encoders with Line Driver

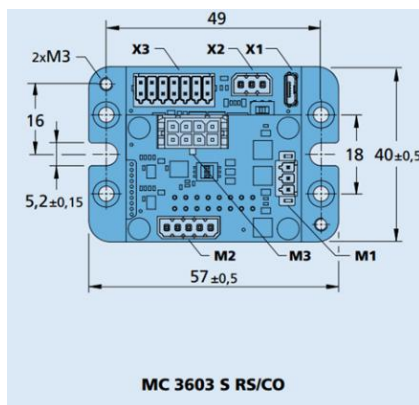
| Motor    | Motor Option #    | Option Description                    | Encoder    | Enc. Opt. # | Option Description                    | Adapter | MC       |
|----------|-------------------|---------------------------------------|------------|-------------|---------------------------------------|---------|----------|
| 1627 GXR | 7937 <sup>1</sup> | Cables (2 wires) with Phoenix 1012267 | IEX3-4096L | 7981        | Cable w. MOLEX 8p. microfit connector | -       | MC3603 S |

(1) Alternative solution: motor option 7935 (X/Y/Z/XX) or 7936 + Connector Set 6501.00362 to be bought separately. Option Y7935 can be omitted (being the std. for combination with Encoder).

### b. Connection Diagram



### c. Drawing of the MC



## Rechtliche Hinweise

**Urheberrechte.** Alle Rechte vorbehalten. Ohne vorherige ausdrückliche schriftliche Zustimmung der Dr. Fritz Faulhaber & Co. KG darf diese Application Note oder Teile dieser unabhängig von dem Zweck insbesondere nicht vervielfältigt, reproduziert, gespeichert (z.B. in einem Informationssystem) oder be- oder verarbeitet werden.

**Gewerbliche Schutzrechte.** Mit der Veröffentlichung, Übergabe/Übersendung oder sonstigen Zur-Verfügung-Stellung dieser Application Note werden weder ausdrücklich noch konkludent Rechte an gewerblichen Schutzrechten, übertragen noch Nutzungsrechte oder sonstige Rechte an diesen eingeräumt. Dies gilt insbesondere für gewerbliche Schutzrechte, die mittelbar oder unmittelbar den beschriebenen Anwendungen und/oder Funktionen dieser Application Note zugrunde liegen oder mit diesen in Zusammenhang stehen.

**Kein Vertragsbestandteil; Unverbindlichkeit der Application Note.** Die Application Note ist nicht Vertragsbestandteil von Verträgen, die die Dr. Fritz Faulhaber GmbH & Co. KG abschließt, und der Inhalt der Application Note stellt auch keine Beschaffenheitsangabe für Vertragsprodukte dar, soweit in den jeweiligen Verträgen nicht ausdrücklich etwas anderes vereinbart ist. Die Application Note beschreibt unverbindlich ein mögliches Anwendungsbeispiel. Die Dr. Fritz Faulhaber GmbH & Co. KG übernimmt insbesondere keine Gewährleistung oder Garantie dafür und steht auch insbesondere nicht dafür ein, dass die in der Application Note illustrierten Abläufe und Funktionen stets wie beschrieben aus- und durchgeführt werden können und dass die in der Application Note beschriebenen Abläufe und Funktionen in anderen Zusammenhängen und Umgebungen ohne zusätzliche Tests oder Modifikationen mit demselben Ergebnis umgesetzt werden können. Der Kunde und ein sonstiger Anwender müssen sich jeweils im Einzelfall vor Vertragsabschluss informieren, ob die Abläufe und Funktionen in ihrem Bereich anwendbar und umsetzbar sind.

**Keine Haftung.** Die Dr. Fritz Faulhaber GmbH & Co. KG weist darauf hin, dass aufgrund der Unverbindlichkeit der Application Note keine Haftung für Schäden übernommen wird, die auf die Application Note und deren Anwendung durch den Kunden oder sonstigen Anwender zurückgehen. Insbesondere können aus dieser Application Note und deren Anwendung keine Ansprüche aufgrund von Verletzungen von Schutzrechten Dritter, aufgrund von Mängeln oder sonstigen Problemen gegenüber der Dr. Fritz Faulhaber GmbH & Co. KG hergeleitet werden.

**Änderungen der Application Note.** Änderungen der Application Note sind vorbehalten. Die jeweils aktuelle Version dieser Application Note erhalten Sie von Dr. Fritz Faulhaber GmbH & Co. KG unter der Telefonnummer +49 7031 638 345 oder per Mail von [mcsupport@faulhaber.de](mailto:mcsupport@faulhaber.de).

## Legal notices

**Copyrights.** All rights reserved. This Application Note and parts thereof may in particular not be copied, reproduced, saved (e.g. in an information system), altered or processed in any way irrespective of the purpose without the express prior written consent of Dr. Fritz Faulhaber & Co. KG.

**Industrial property rights.** In publishing, handing over/dispatching or otherwise making available this Application Note Dr. Fritz Faulhaber & Co. KG does not expressly or implicitly grant any rights in industrial property rights nor does it transfer rights of use or other rights in such industrial property rights. This applies in particular to industrial property rights on which the applications and/or functions of this Application Note are directly or indirectly based or with which they are connected.

**No part of contract; non-binding character of the Application Note.** The Application Note is not a constituent part of contracts concluded by Dr. Fritz Faulhaber & Co. KG and the content of the Application Note does not constitute any contractual quality statement for products, unless expressly set out otherwise in the respective contracts. The Application Note is a non-binding description of a possible application. In particular Dr. Fritz Faulhaber & Co. KG does not warrant or guarantee and also makes no representation that the processes and functions illustrated in the Application Note can always be executed and implemented as

described and that they can be used in other contexts and environments with the same result without additional tests or modifications. The customer and any user must inform themselves in each case before concluding a contract concerning a product whether the processes and functions are applicable and can be implemented in their scope and environment.

**No liability.** Owing to the non-binding character of the Application Note Dr. Fritz Faulhaber & Co. KG will not accept any liability for losses arising from its application by customers and other users. In particular, this Application Note and its use cannot give rise to any claims based on infringements of industrial property rights of third parties, due to defects or other problems as against Dr. Fritz Faulhaber GmbH & Co. KG.

**Amendments to the Application Note.** Dr. Fritz Faulhaber & Co. KG reserves the right to amend Application Notes. The current version of this Application Note may be obtained from Dr. Fritz Faulhaber & Co. KG by calling +49 7031 638 345 or sending an e-mail to [mcsupport@faulhaber.de](mailto:mcsupport@faulhaber.de).