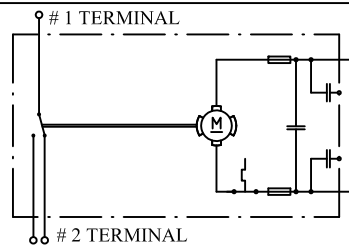


All dimensions in millimeters

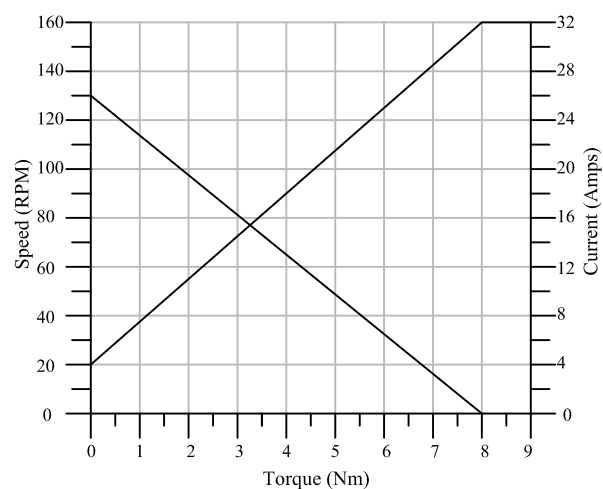
## Technical Data

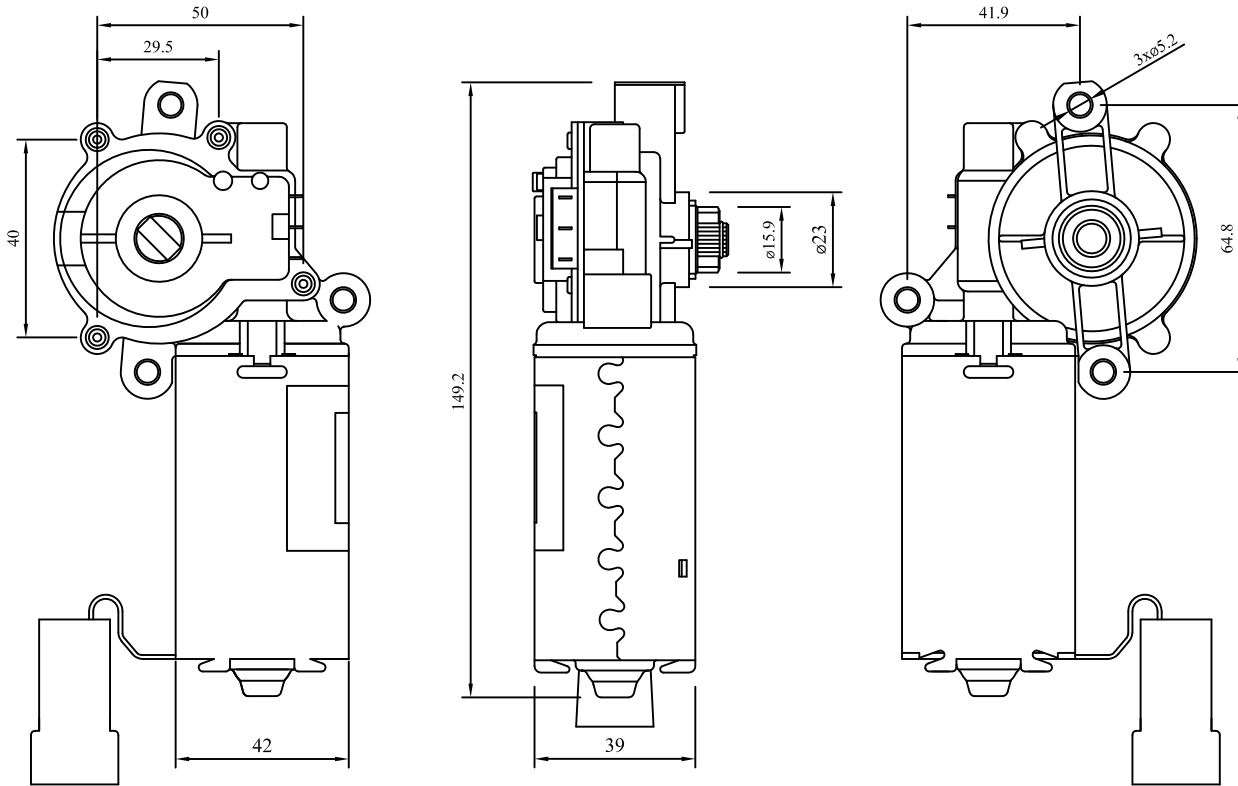
|                        |   |                  |
|------------------------|---|------------------|
| Rated Voltage:         | = | 13 V DC          |
| No Load Speed:         | = | 130 RPM          |
| Stall Torque:          | = | 8 Nm             |
| Stall Current:         | = | 32 Amps          |
| Output Gear Type:      | = | 19-Tooth         |
| Output Gear Material:  | = | Metal            |
| Output Gear O. D.:     | = | 15.9 mm          |
| Gear Housing Material: | = | Metal            |
| Connector Type:        | = | Packard 12064750 |
| Hall Sensor:           | = | None             |
| Protection Class:      | = | IP 40            |
| Approximative Weight:  | = | 0.7 Kg           |

## Schematic



## Motor Performance



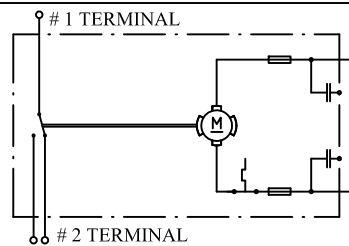


All dimensions in millimeters

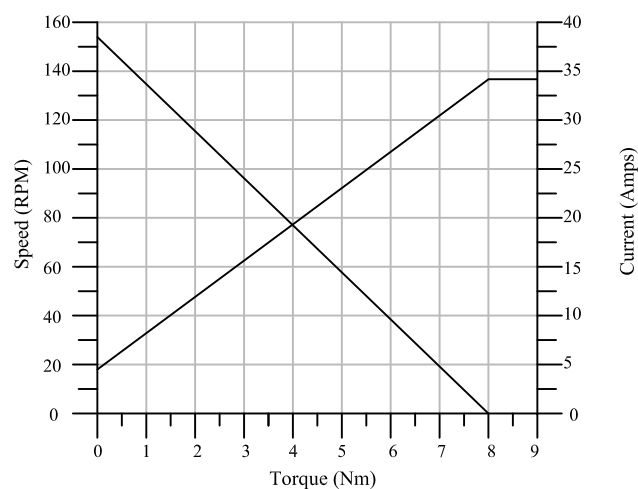
## Technical Data

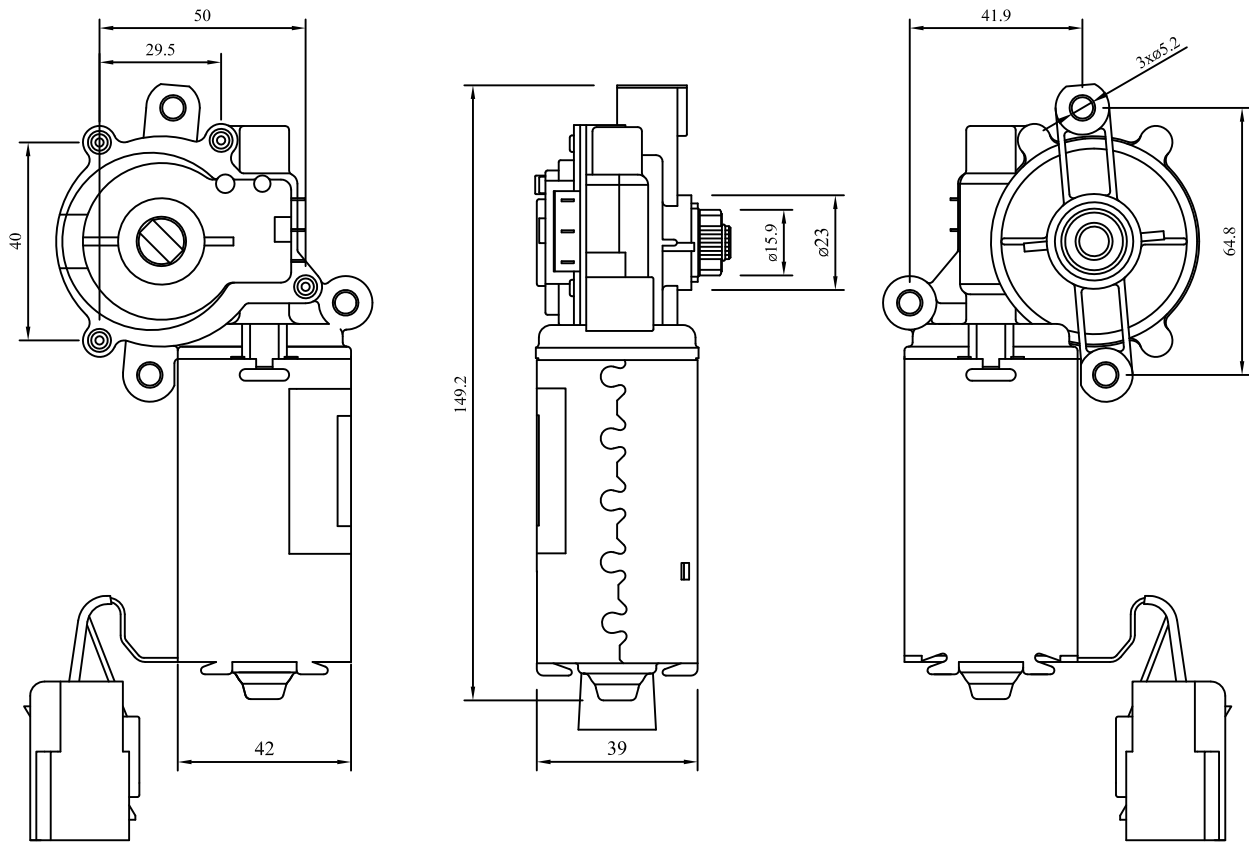
|                        |   |               |
|------------------------|---|---------------|
| Rated Voltage:         | = | 13 V DC       |
| No Load Speed:         | = | 155 RPM       |
| Stall Torque:          | = | 8 Nm          |
| Stall Current:         | = | 34 Amps       |
| Output Gear Type:      | = | 19-Tooth      |
| Output Gear Material:  | = | Metal         |
| Output Gear O. D.:     | = | 15.9 mm       |
| Gear Housing Material: | = | Metal         |
| Connector Type:        | = | AMP 180.924-0 |
| Hall Sensor:           | = | None          |
| Protection Class:      | = | IP 40         |
| Approximative Weight:  | = | 0.7 Kg        |

## Schematic



## Motor Performance



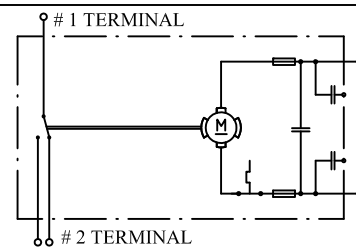


All dimensions in millimeters

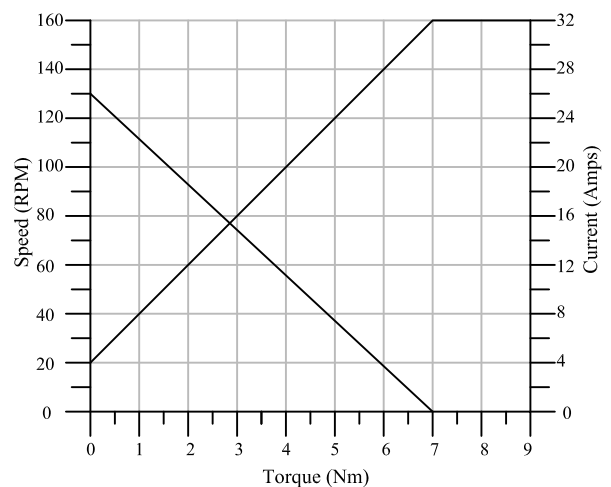
## Technical Data

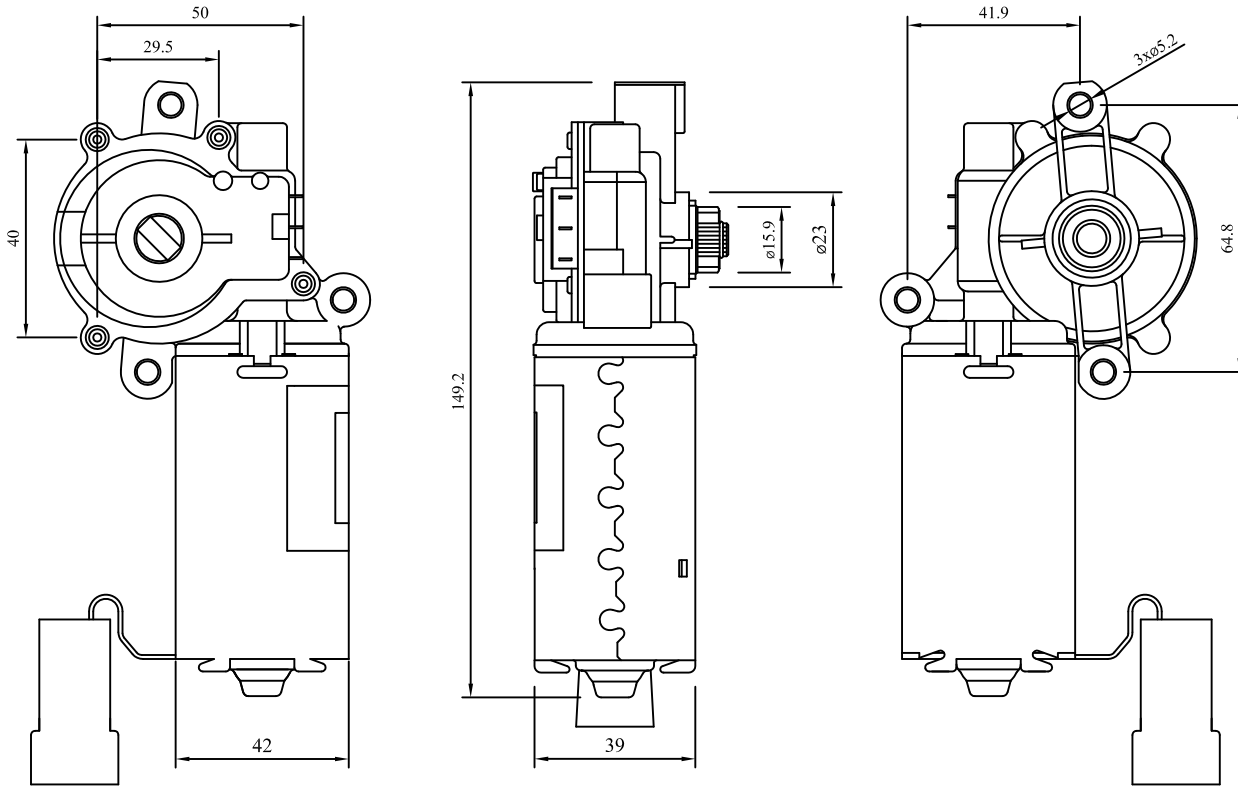
|                        |   |                     |
|------------------------|---|---------------------|
| Rated Voltage:         | = | 13 V DC             |
| No Load Speed:         | = | 130 RPM             |
| Stall Torque:          | = | 7 Nm                |
| Stall Current:         | = | 32 Amps             |
| Output Gear Type:      | = | 19-Tooth            |
| Output Gear Material:  | = | Metal               |
| Output Gear O. D.:     | = | 15.9 mm             |
| Gear Housing Material: | = | Metal               |
| Connector Type:        | = | Yazaki 7282-5620-4A |
| Hall Sensor:           | = | Melexis 90224 ALVA  |
| Protection Class:      | = | IP 40               |
| Approximative Weight:  | = | 0.7 Kg              |

## Schematic



## Motor Performance



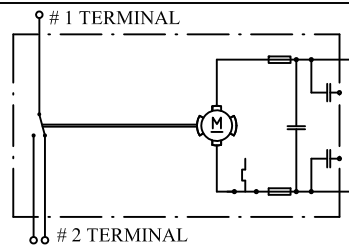


All dimensions in millimeters

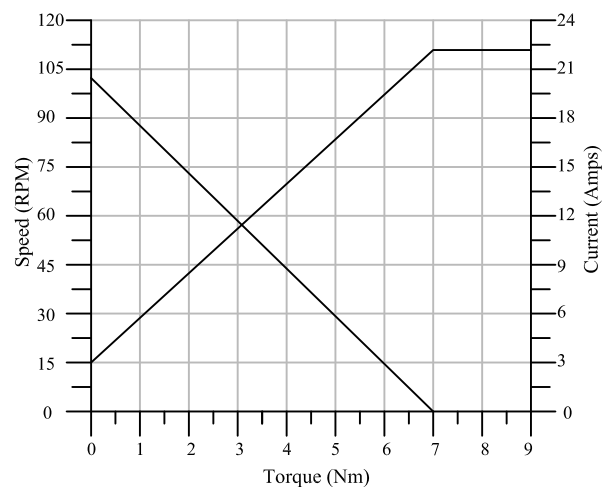
## Technical Data

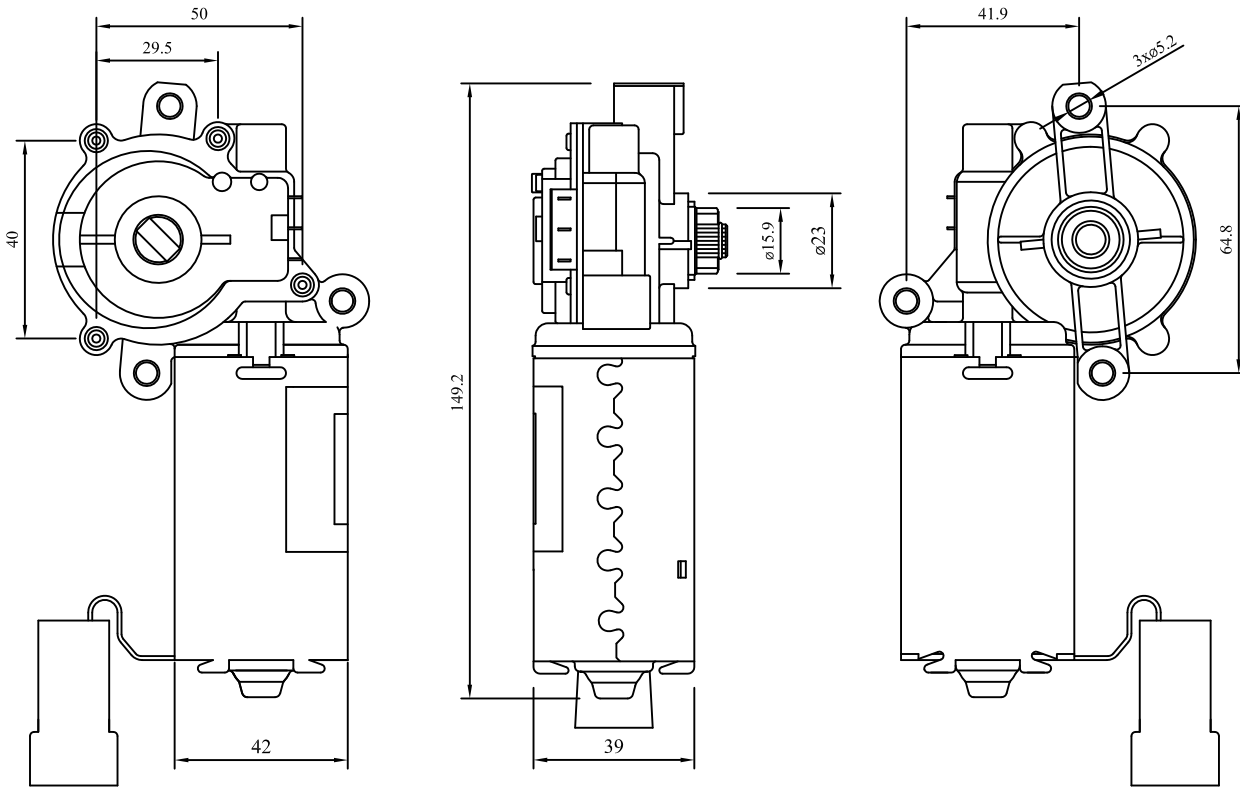
|                        |   |               |
|------------------------|---|---------------|
| Rated Voltage:         | = | 13 V DC       |
| No Load Speed:         | = | 100 RPM       |
| Stall Torque:          | = | 7 Nm          |
| Stall Current:         | = | 22 Amps       |
| Output Gear Type:      | = | 19-Tooth      |
| Output Gear Material:  | = | Metal         |
| Output Gear O. D.:     | = | 15.9 mm       |
| Gear Housing Material: | = | Metal         |
| Connector Type:        | = | AMP 180.924-0 |
| Hall Sensor:           | = | None          |
| Protection Class:      | = | IP 40         |
| Approximative Weight:  | = | 0.7 Kg        |

## Schematic



## Motor Performance



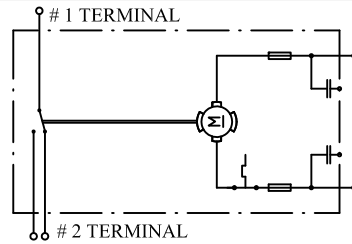


All dimensions in millimeters

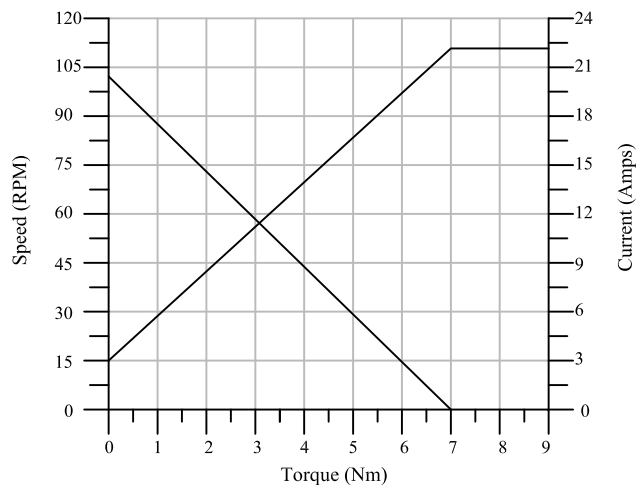
## Technical Data

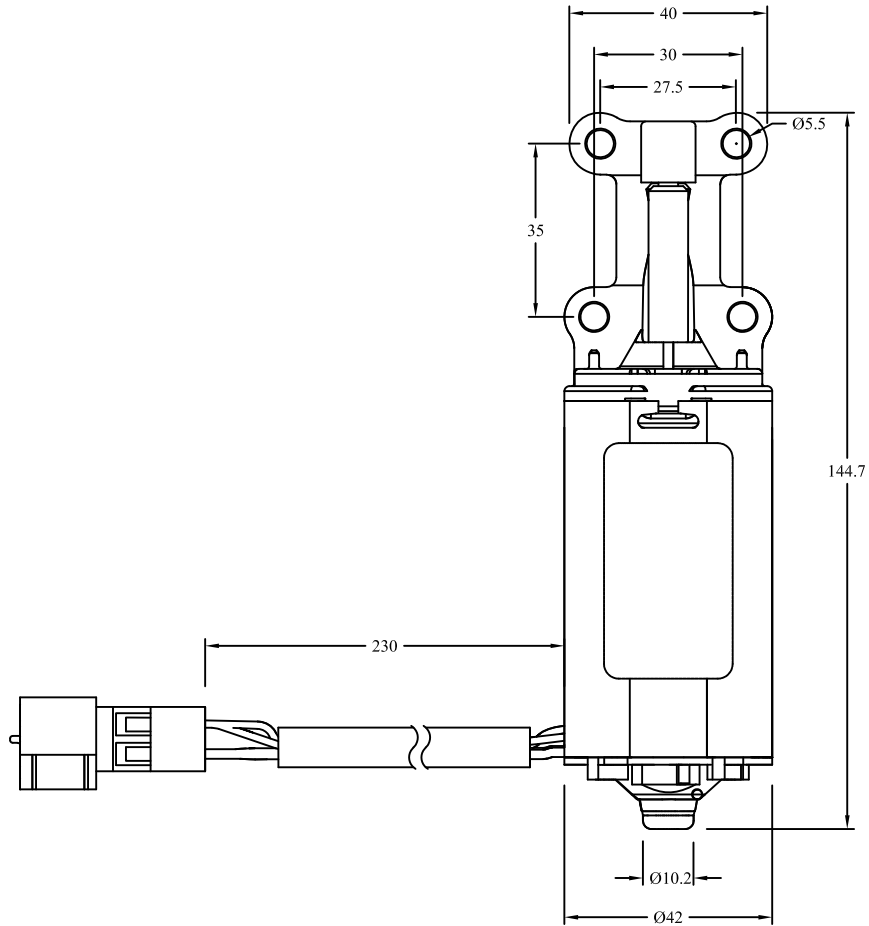
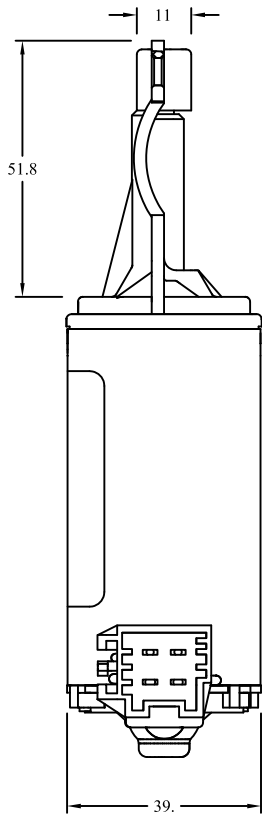
|                        |                       |
|------------------------|-----------------------|
| Rated Voltage:         | = 13 V DC             |
| No Load Speed:         | = 100 RPM             |
| Stall Torque:          | = 7 Nm                |
| Stall Current:         | = 22 Amps             |
| Output Gear Type:      | = 19-Tooth            |
| Output Gear Material:  | = Metal               |
| Output Gear O. D.:     | = 15.9 mm             |
| Gear Housing Material: | = Metal               |
| Connector Type:        | = Yazaki 7128-1964-30 |
| Hall Sensor:           | = None                |
| Protection Class:      | = IP 40               |
| Approximative Weight:  | = 0.7 Kg              |

## Schematic



## Motor Performance



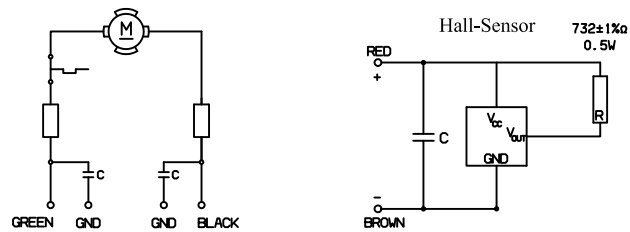


All dimensions in millimeters

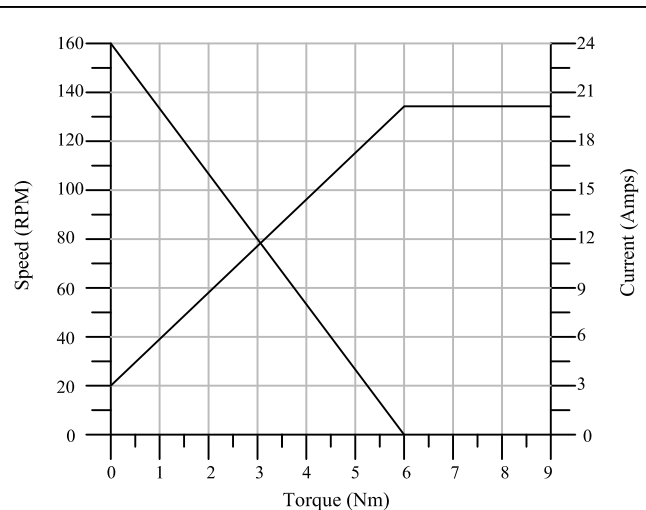
## Technical Data

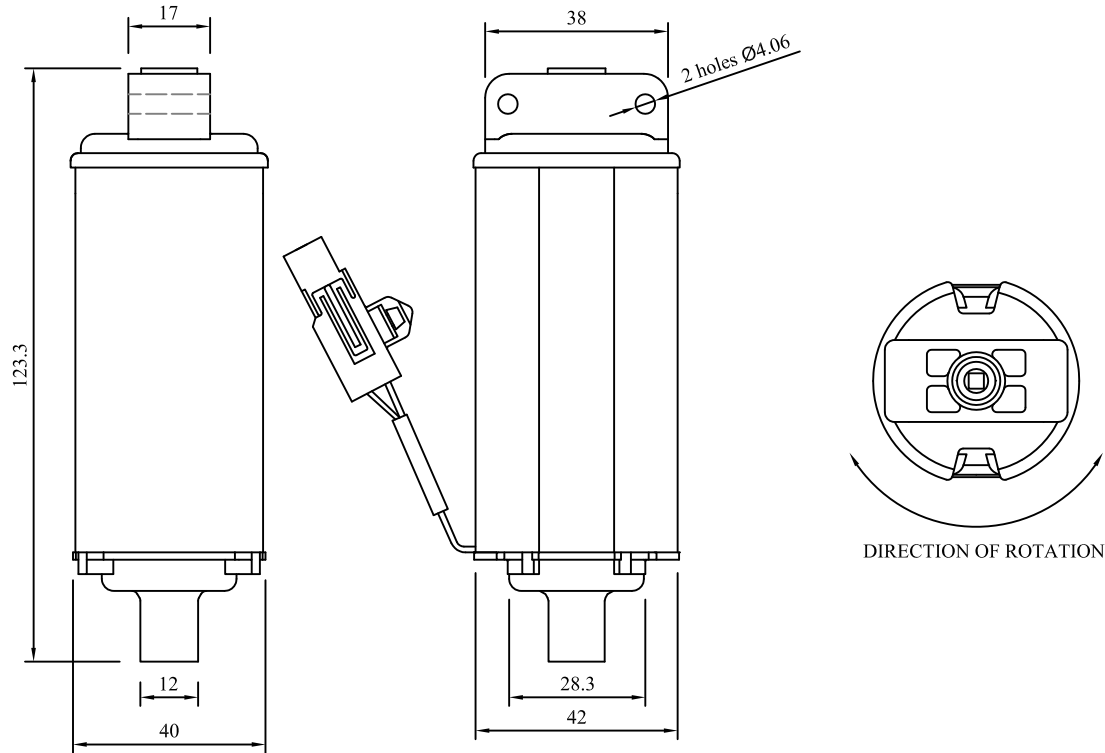
|                        |                      |
|------------------------|----------------------|
| Rated Voltage:         | = 13 V DC            |
| No Load Speed:         | = 160 RPM            |
| Stall Torque:          | = 6 Nm               |
| Stall Current:         | = 20 Amps            |
| Output Shaft Type:     | = Worm               |
| Output Shaft Length:   | = N/A                |
| Output Shaft Diameter: | = N/A                |
| Connector Type:        | = Kostal A2205458128 |
| Hall Sensor:           | = Allegro A3187TTR   |
| Protection Class:      | = IP 40              |
| Approximative Weight:  | = 0.5 Kg             |

## Schematic



## Motor Performance



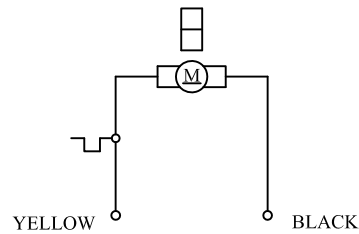


All dimensions in millimeters

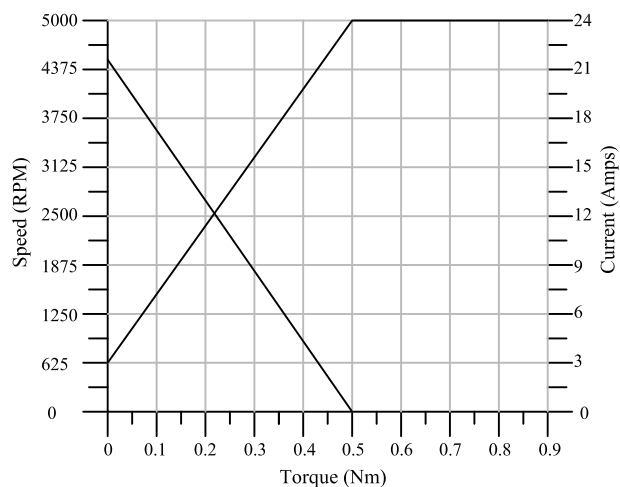
## Technical Data

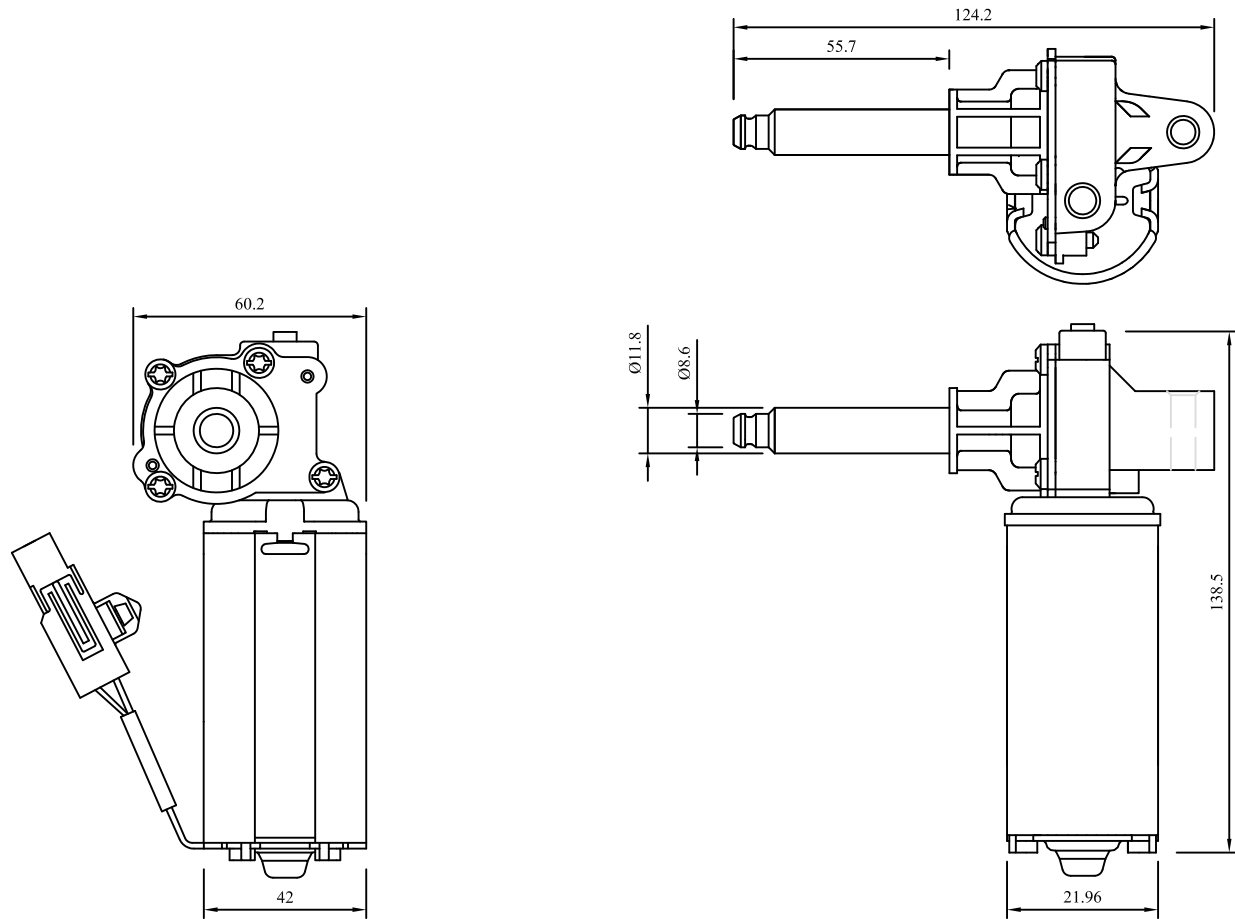
|                        |   |                  |
|------------------------|---|------------------|
| Rated Voltage:         | = | 13 V DC          |
| No Load Speed:         | = | 4430 RPM         |
| Stall Torque:          | = | 0.5 Nm           |
| Stall Current:         | = | 24 Amps          |
| Output Shaft Type:     | = | Dual             |
| Output Shaft Length:   | = |                  |
| Output Shaft Diameter: | = |                  |
| Terminal Type:         | = | Yazaki 7114-4021 |
| Hall Sensor:           | = | None             |
| Protection Class:      | = | IP 40            |
| Approximative Weight:  | = | 0.6 Kg           |

## Schematic



## Motor Performance



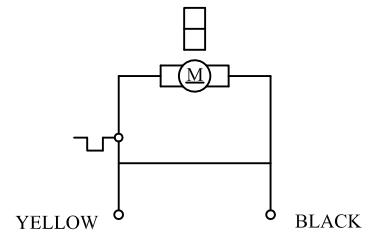


All dimensions in millimeters

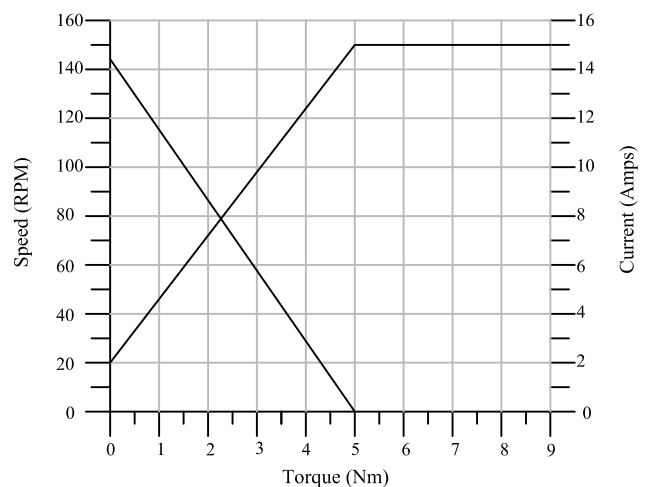
## Technical Data

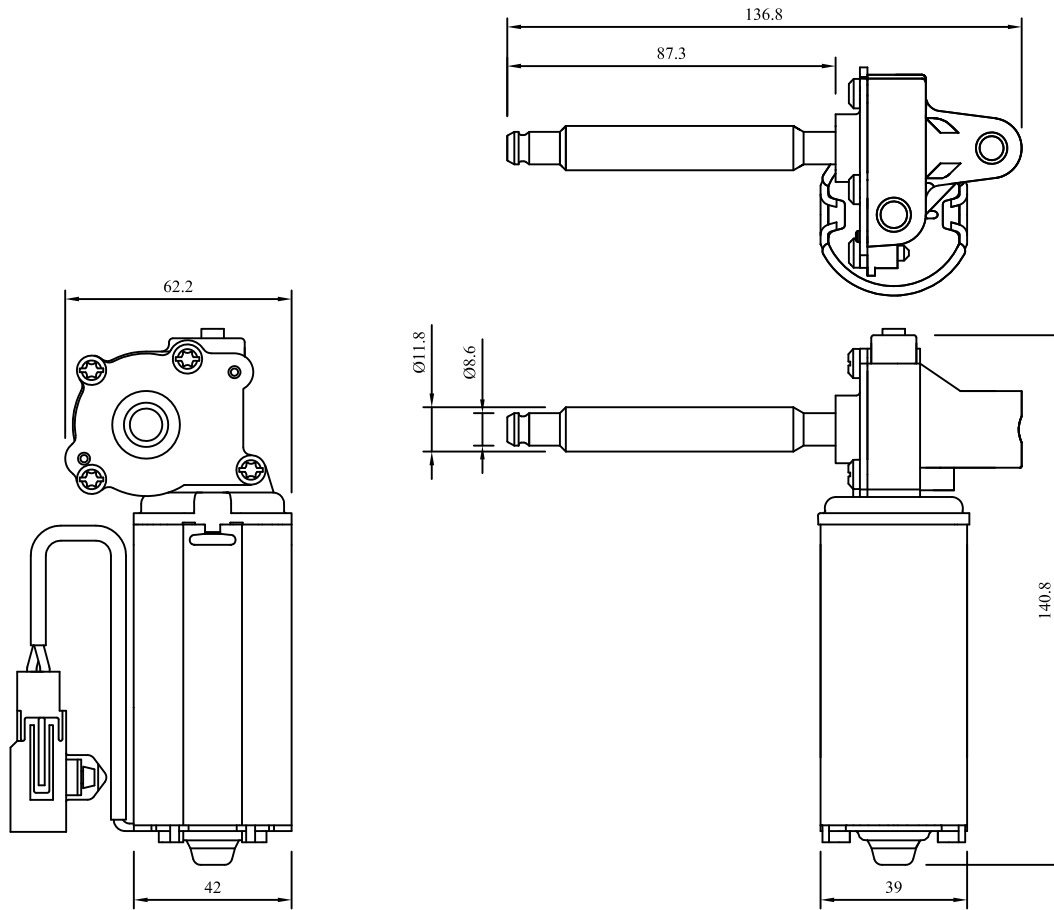
|                        |                    |
|------------------------|--------------------|
| Rated Voltage:         | = 13 V DC          |
| No Load Speed:         | = 142 RPM          |
| Stall Torque:          | = 5 Nm             |
| Stall Current:         | = 15 Amps          |
| Output Shaft Type:     | = Lead Screw       |
| Output Shaft Diameter: | = 11.8 mm          |
| Output Shaft Length:   | = 55.7 mm          |
| Gear Housing Material: | = Metal            |
| Connector Type:        | = Yazaki 7114-4021 |
| Hall Sensor:           | = None             |
| Protection Class:      | = IP 40            |
| Approximative Weight:  | = 0.9 Kg           |

## Schematic



## Motor Performance



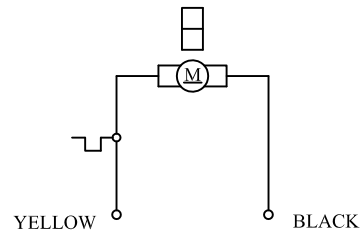


All dimensions in millimeters

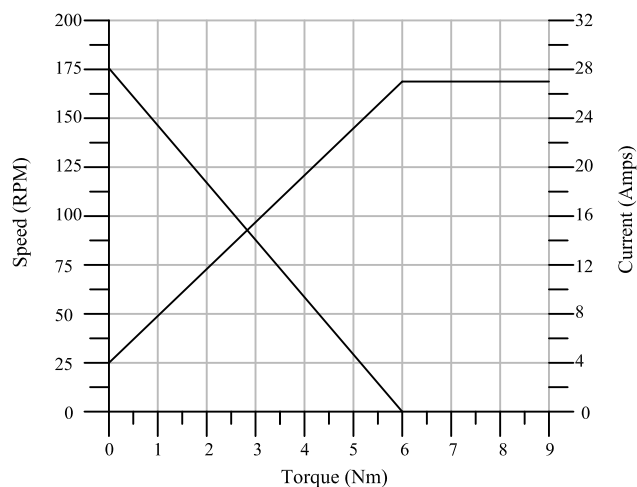
## Technical Data

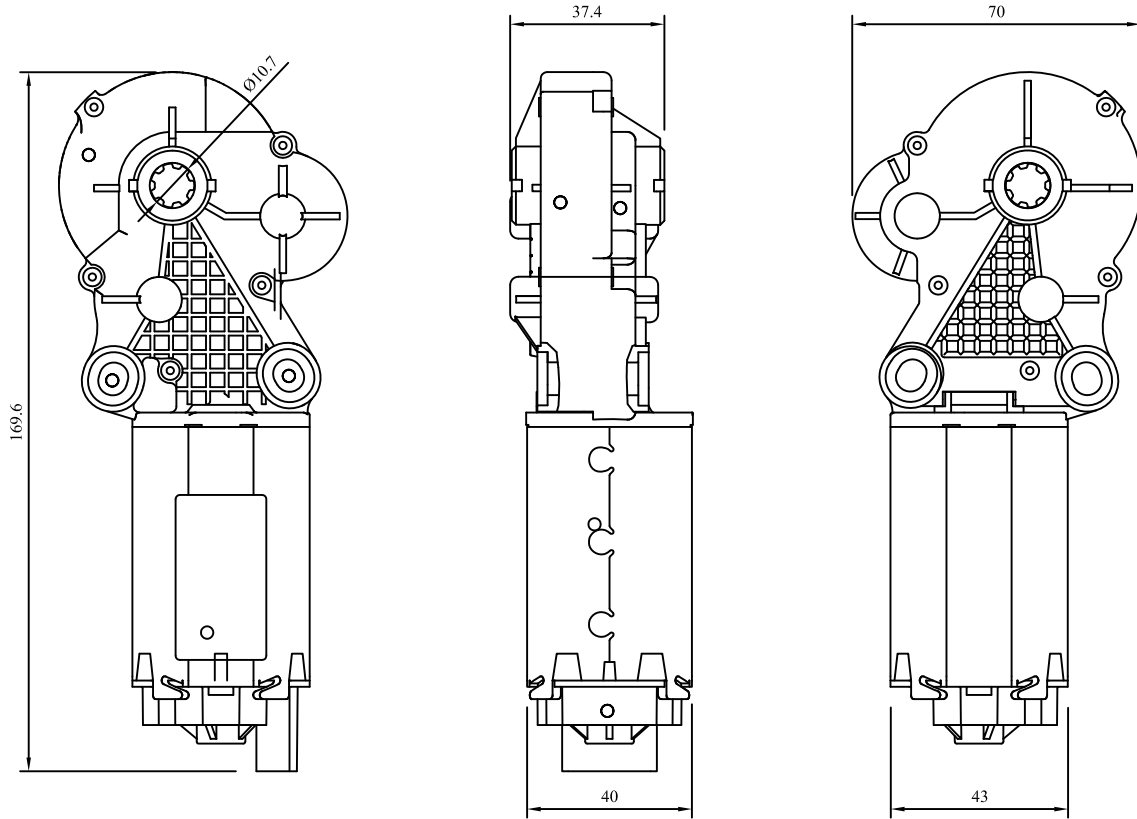
|                        |                    |
|------------------------|--------------------|
| Rated Voltage:         | = 13 V DC          |
| No Load Speed:         | = 176 RPM          |
| Stall Torque:          | = 6 Nm             |
| Stall Current:         | = 27 Amps          |
| Output Shaft Type:     | = Lead screw       |
| Output Shaft Diameter: | = 11.8 mm          |
| Output Shaft Length:   | = 87.3 mm          |
| Gear Housing Material: | = Metal            |
| Connector Type:        | = Yazaki 7282-4360 |
| Hall Sensor:           | = None             |
| Protection Class:      | = IP 40            |
| Approximative Weight:  | = 0.9 Kg           |

## Schematic



## Motor Performance



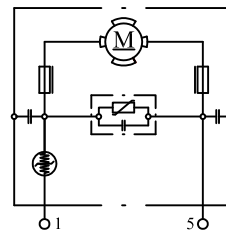


All dimensions in millimeters

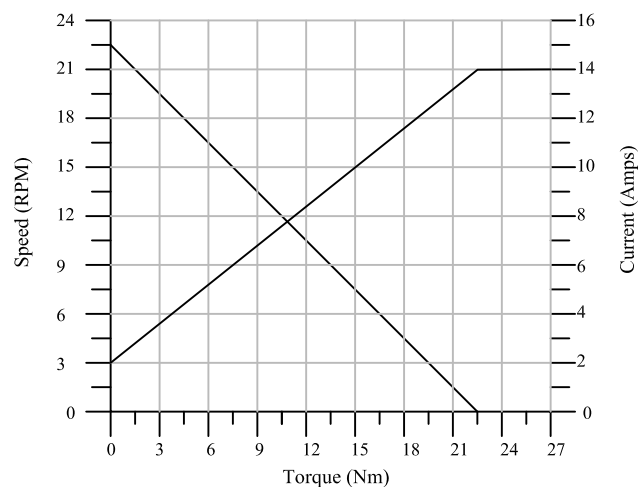
## Technical Data

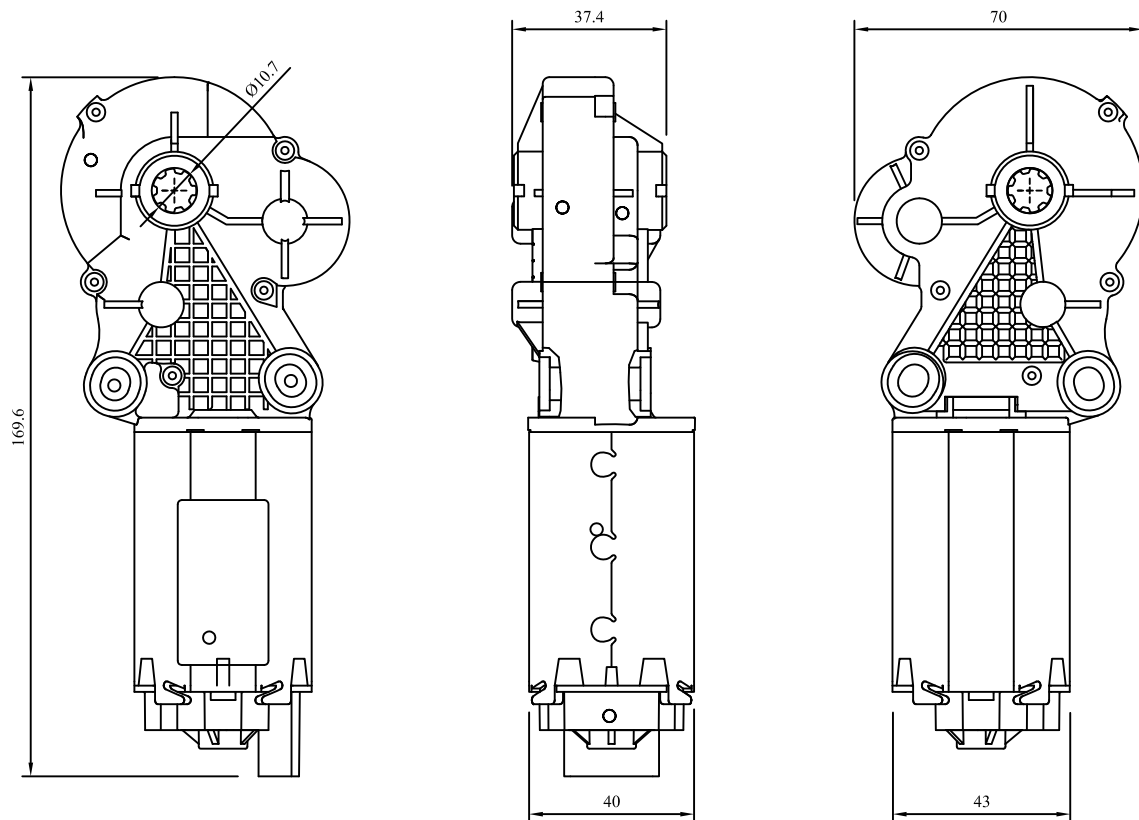
|                        |               |
|------------------------|---------------|
| Rated Voltage:         | = 13 V DC     |
| No Load Speed:         | = 23 RPM      |
| Stall Torque:          | = 22 Nm       |
| Stall Current:         | = 14 Amps     |
| Output Gear Type:      | = 7-Tooth     |
| Output Gear Material:  | = Plastic     |
| Output Gear O. D.:     | = N/A         |
| Gear Housing Material: | = Plastic     |
| Connector Type:        | = AMP 1379218 |
| Hall Sensor:           | = None        |
| Protection Class:      | = IP 40       |
| Approximative Weight:  | = 0.5 Kg      |

## Schematic



## Motor Performance



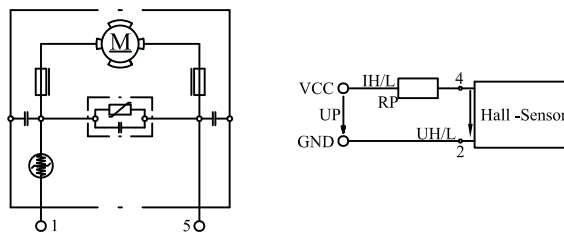


All dimensions in millimeters

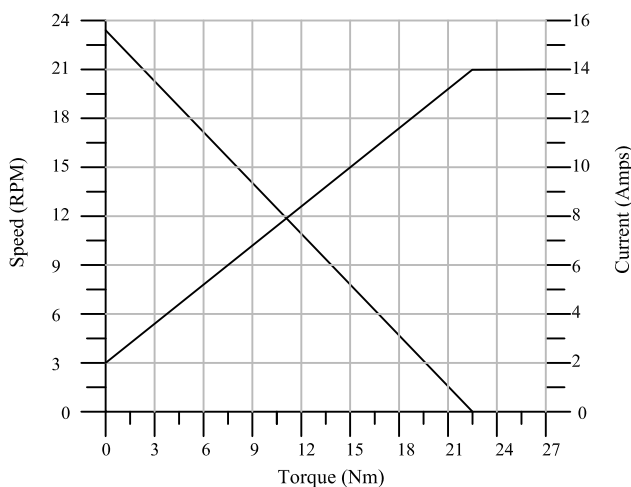
## Technical Data

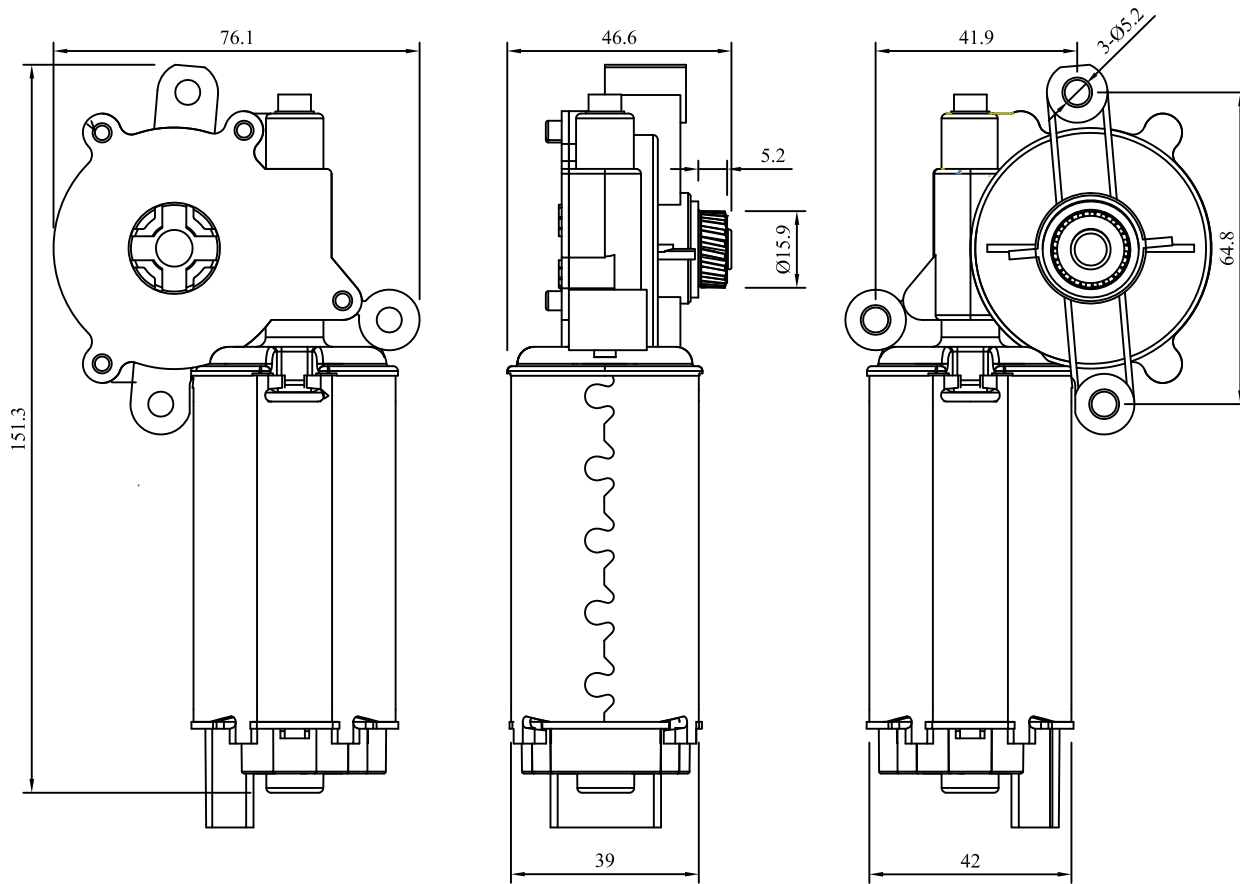
|                        |                 |
|------------------------|-----------------|
| Rated Voltage:         | = 13 V DC       |
| No Load Speed:         | = 23 RPM        |
| Stall Torque:          | = 22 Nm         |
| Stall Current:         | = 14 Amps       |
| Output Gear Type:      | = 7-Tooth       |
| Output Gear Material:  | = Plastic       |
| Output Gear O. D.:     | = N/A           |
| Gear Housing Material: | = Plastic       |
| Connector Type:        | = AMP 1379218   |
| Hall Sensor:           | = Allegro A3281 |
| Protection Class:      | = IP 40         |
| Approximative Weight:  | = 0.46 Kg       |

## Schematic



## Motor Performance



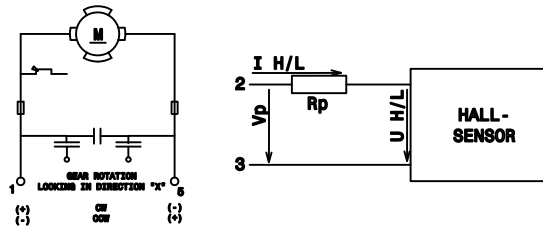


All dimensions in millimeters

## Technical Data

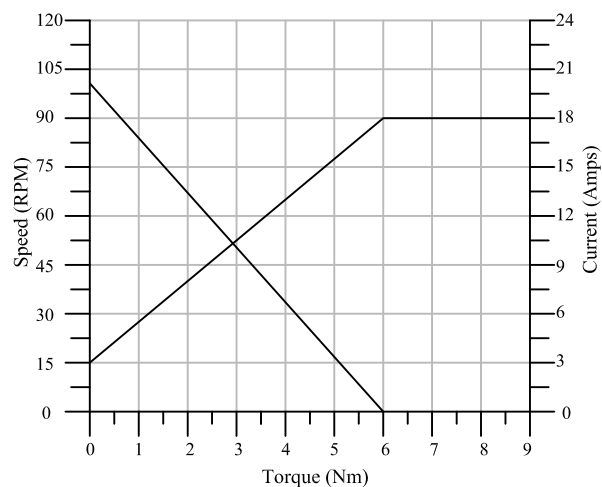
|                        |   |                  |
|------------------------|---|------------------|
| Rated Voltage:         | = | 13 V DC          |
| No Load Speed:         | = | 100 RPM          |
| Stall Torque:          | = | 6 Nm             |
| Stall Current:         | = | 18 Amps          |
| Output Gear Type:      | = | 19-Tooth         |
| Output Gear Material:  | = | Metal            |
| Output Gear O. D.:     | = | 15.9 mm          |
| Gear Housing Material: | = | Metal            |
| Connector Type:        | = | Tyco 1379217-3   |
| Hall Sensor:           | = | Micronas 508SF-K |
| Protection Class:      | = | IP 40            |
| Approximative Weight:  | = | 0.7 Kg           |

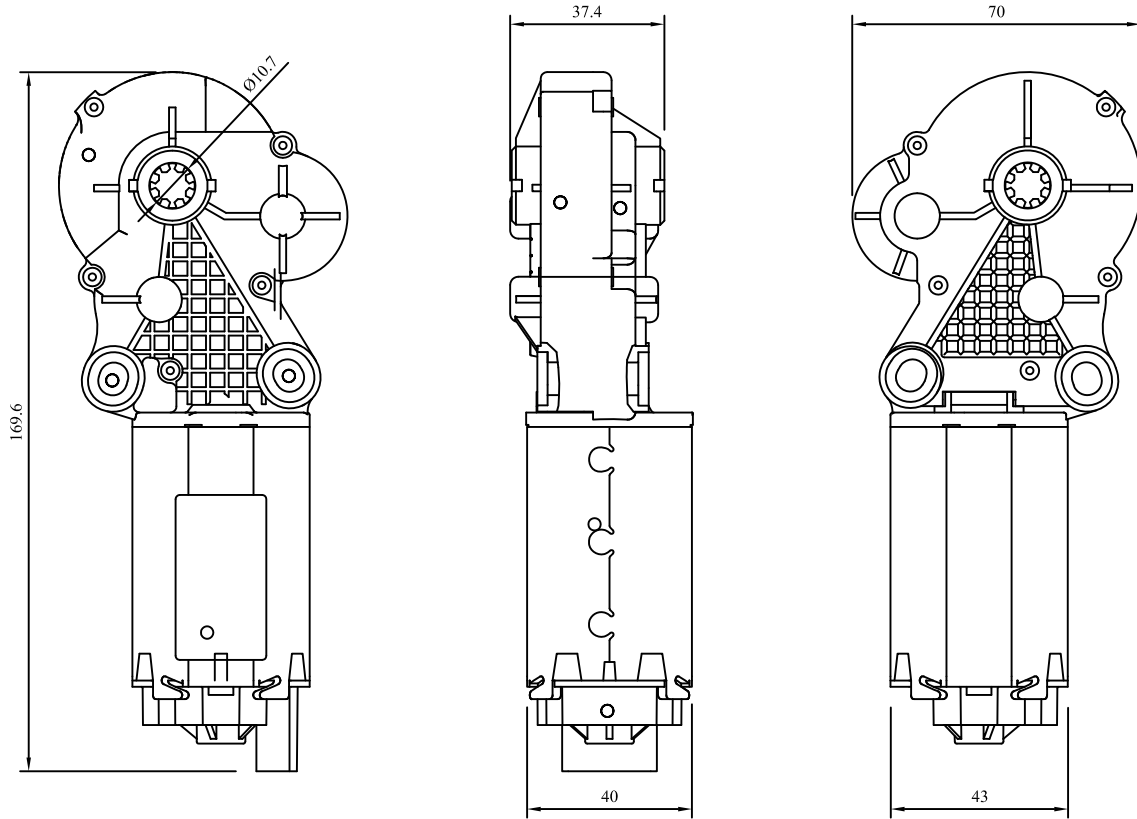
## Schematic



MICRONAS 508SF-K

## Motor Performance



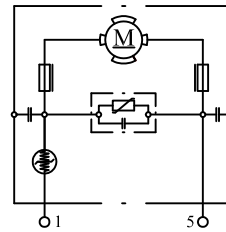


All dimensions in millimeters

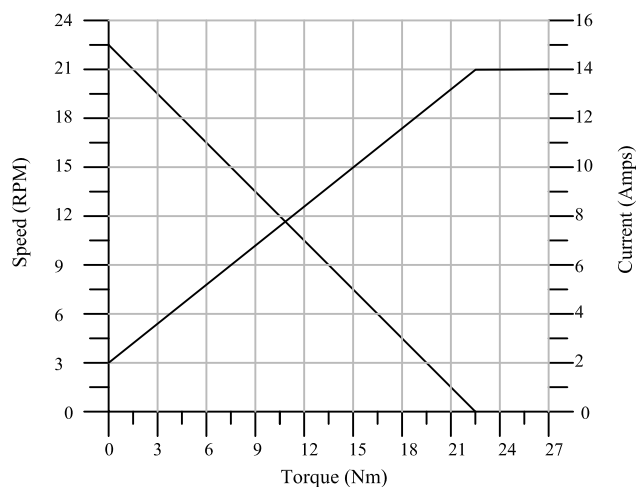
## Technical Data

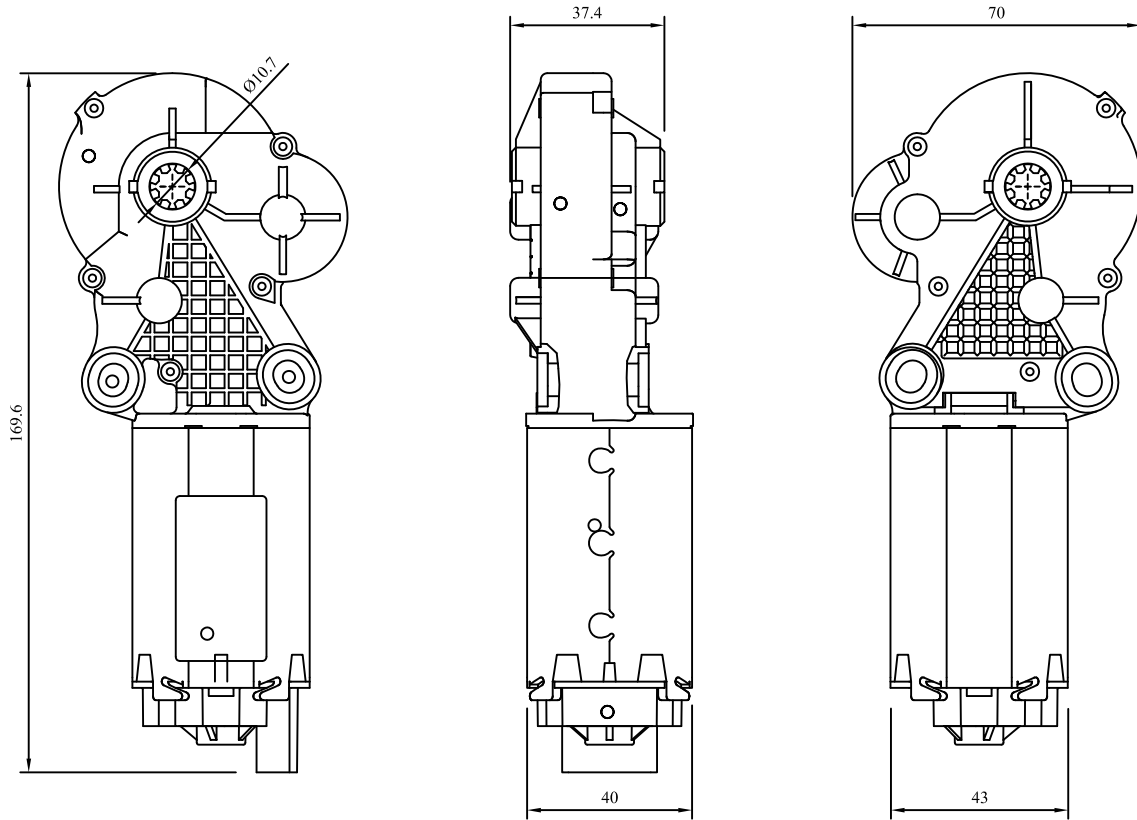
|                        |               |
|------------------------|---------------|
| Rated Voltage:         | = 13 V DC     |
| No Load Speed:         | = 23 RPM      |
| Stall Torque:          | = 22 Nm       |
| Stall Current:         | = 14 Amps     |
| Output Gear Type:      | = 8-Tooth     |
| Output Gear Material:  | = Plastic     |
| Output Shaft Diameter: | = N/A         |
| Gear Housing Material: | = Plastic     |
| Connector Type:        | = AMP 1379218 |
| Hall Sensor:           | = None        |
| Protection Class:      | = IP 40       |
| Approximative Weight:  | = 0.5 Kg      |

## Schematic



## Motor Performance



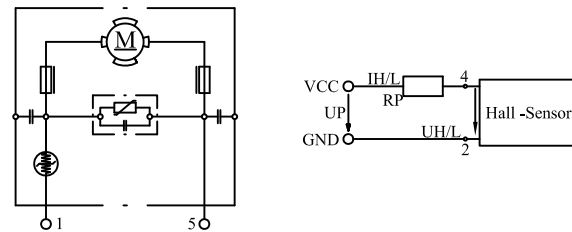


All dimensions in millimeters

## Technical Data

|                        |                 |
|------------------------|-----------------|
| Rated Voltage:         | = 13 V DC       |
| No Load Speed:         | = 23 RPM        |
| Stall Torque:          | = 22 Nm         |
| Stall Current:         | = 14 Amps       |
| Output Gear Type:      | = 8-Tooth       |
| Output Gear Material:  | = Plastic       |
| Output Gear O. D.:     | = N/A           |
| Gear Housing Material: | = Plastic       |
| Connector Type:        | = AMP 1379218   |
| Hall Sensor:           | = Allegro A3281 |
| Protection Class:      | = IP 40         |
| Approximative Weight:  | = 0.46 Kg       |

## Schematic



## Motor Performance

