Motorsizer 4.1 – Guide lines. (2026-03-10)

1.0 – Introduction

Motorsizer 4.1 is an internet-based program to help you to find the best solutions for your application among JVL Integrated Stepper (MIS) and Servo (MAC) motors with and without brakes together with the JVL supplied gear boxes.

Compared to Motorsizer version 4.0 (Now called "Manual") we have made a new filtering that shows the results in a way that makes it easier to find a solution that fit's your requests (called "Automatic") and based on some pre-filter settings like "All", "RS232 and RS485", "Ethernet", "Cost effective" and others.
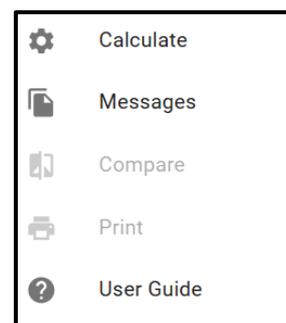

1.1 - Menu (1.):

In the menu there are 5 possibilities including this User Guide document for guidance.

- Calculate
- Messages
- Compare
- Print
- User Guide

1.2 - Calculate:

When you press "Calculate" you get a box where you have to key-in your E-mail address, Project and Scenario.
Then the project is saved and a calculation is made from the parameters entered for the mechanics and the motion profile and the selected filters. (See more in "Calculation Results".)
Giving these informations to JVL Support or your local supplier, they'll be able to help you selecting the best solution for your application in case you need some help.

1.3 - Messages:

When the project is calculated you can see what has happened to the data. Which motors and gears have been removed and what calculations have been made.

1.4 - Compare:

When the calculations have been made you can select some motors and compare the different values to see which solution is best for your application.

The selected columns in the result list will be the same shown in the compare list.

Here you can compare the Default calculation (without motor and gear) with the selected motors.

You can compare the different parameters but also can see the curves for Velocity, Torque and Power. If you click on the label for Velocity you can remove this curve from the screen and if you click again you can have it back.

Underneath these curves you can also see the Torque/Speed curves which show both Continuous and Peak torque but also the torque needed for acceleration and for deceleration. Also here you can remove or get back the curves by clicking on the labels. In this way you can see if it's running inside the torque curve and if you have some space for running at higher speed or higher torque.

1.5 - Print:

When the calculations have been made you can select some motors and print the different values to see which solution is best for your application. You can print to printer or maybe a pdf-file for later use.

The selected columns in the result list will be the same shown in the compare list.

2.0 - Project Management (2.):

Here you have the list of all your projects and you can make new and erase old ones. You make the new ones when you press "Calculate" and when you mark a project you can erase those.

As a distributer you can see your own projects but also your customers project and you can save a project in your cutomers project folder.   This can be used if we know your customers and have this link.

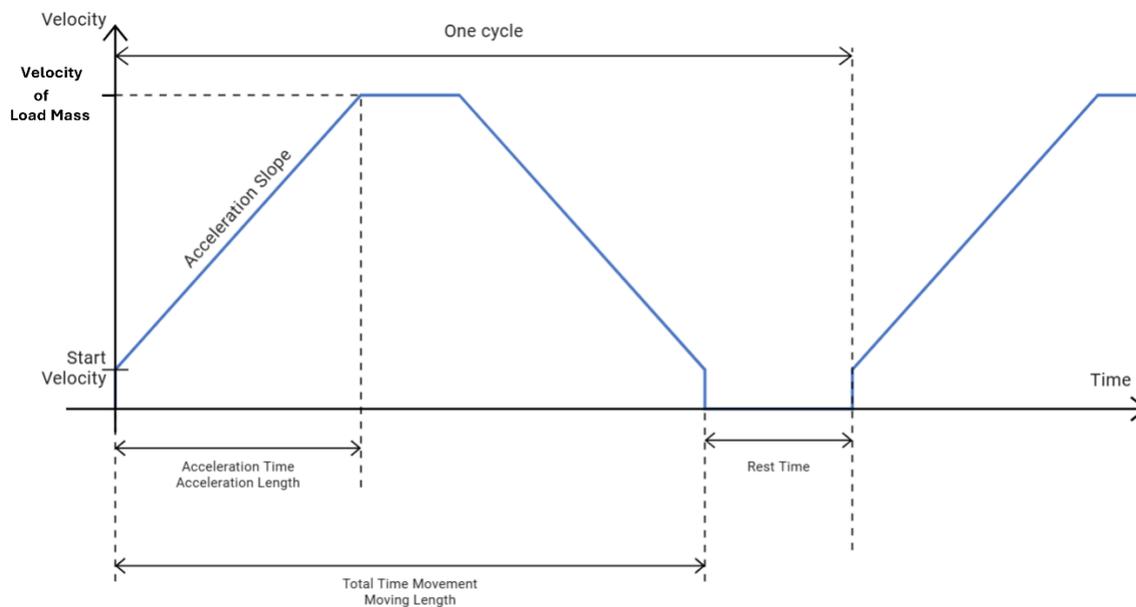JVL can see all project s and can also save projects in all folders.

3.0 - Application (3.)

There are 3 types of applications for which it can be used directly:
- Belt Drive
- Lead Screw
- Rotary Disc.

For other applications you may need to adapt them to one of these 3 options.

The Motion Profile looks like this and is the one we use for the calculation:

The "Acceleration Slope" is the same used for the deceleration.

The rated values for power and torque are looking at only one cycle.

The units for each parameter are flexible and you can select what is best for you or the application.

3.1 - Mechanical data for Belt Drive:

These data are the first to be put into the calculation sheet.

The "*Load mass*" is what you move with the belt. It could be a wagon + some attached load mounted on the wagon.

The highest load you normally get when you move the load upwards why the "*Inclination table*" is the angle up you are transporting the load.

"*Friction*" is often a value you don't know from the application so you can either measure this and put in the value or just give some qualified guess after the first calculation have been made.

The "*Density*" is used for the pulleys to calculate the inertia of those together with "*Pulley Diameter*" and "*Pulley Thickness*" and "*Number of Pulleys*".   Now you also can just use the weight of one pulley to calculate the inertia but only when it's an ideal pulley where it has the same thickness all the way.

The "*Mass of Tooth Belt*" are added to the "Load Mass" for total calculation.

When using the Tooth Belt there might be some "*Tooth Belt efficiency*" that need to be added for the calculation of torque and power.

There may also be some "*Other Rotating Inertia*" that need to be added.

And last some data for mechanical backlash might be added to calculate a total loss of position.

3.2 - Mechanical data for Lead Screw:

These data are the first to be put into the calculation sheet.

The "*Load mass*" is what you move with the leadscrew. It could be a wagon + some attached load mounted on the wagon.

The highest load you normally get when you move the load upwards why the "*Inclination table*" is the angle you are transporting the load.

"*Friction*" is often a value you don't know from the application so you can either measure this and put in the value or just give some qualified guess after the first calculation have been made.

The "*Density*" is used for the lead screw to calculate the inertia of that together with "*Length*" and "*Diameter*".

The "*Pitch*" is used to find the relation between rotation and moving lenght.

When using the Lead Screw there might be some Lead Screw "*Efficiency*" that need to be added for the calculation of torque and power.

And last there might also be some "*Other Rotating Inertia*" that need to be added.

And last some data for mechanical backlash might be added to calculate a total loss of position.

3.3 - Mechanical data for Rotary Disc:

These data are the first to be put into the calculation sheet.

The "*Mass*" is the weight of the rotary disc if know.

If the weight of the disc is not know you key-in 0 and it will be calculated using the "Outer Diameter", the "Inner Diameter", "Density" and "Width" of the disc.   Now you also can just use the weight of the disc to calculate the inertia but only when it's an ideal disc where it has the same thickness all the way.

"*Friction*" is often a value you don't know from the application so you can either measure this and put in the value or just give some qualified guess after the first calculation have been made.

There might also be some "*Other Rotating Inertia*" that need to be added.

And last some data for mechanical backlash might be added to calculate a total loss of position.

4. 0 - Motion Profile (4.):

When all the mechanical data are entered you need to consider how the motor should be moving.

"*Moving Length*" for Belt Drive and Lead Screw are often a length in m or mm.
For a rotary disc it could be either mm or degrees. In case you want to use mm the length is at the outer diameter.

The "*Rest Time*" is the pause time between each move. This time is included in the calculation of rated power and torque values.

Then we have "*Total Time of Movement*", "*Acceleration Time*", "*Acceleration Slope*", "*Acceleration Length*" and "Velocity Of Load Mass".
You have to key-in a value for 2 of those 5 options and the others should be 0.

In case you want to change from using "*Total Time of Movement"* and "*Acceleration Time*" and want to use "*Acceleration Slope*" instead of "*Acceleration Time*" you change "*Acceleration Time*" to 0 and then key-in the value for "*Acceleration Slope*".

When you change any of the above parameters the curves for Velocity, Torque and Power will change according to these values.

If you key in an Acceleration time longer than half the Total Movement time then you'll get an error and you need to correct a parameter so this is not happening again.

And last we have the "Start Velocity" value.
This value is **only** used for steppers in open-loop to avoid resonances which might make the motor stall (Lose position).
A standard 200 step/rev stepper motor in open-loop often have resonances around 40-60rpm (133 to 200Hz) why we can then make a calculation for at start velocity higher than this speed to avoid the resonance.

5.0 - Filters (5.)

Now all the data for the application are keyed-in and you need to set up some data from which you can get the result you want when Motorsizer 4.1 make the calculation.

With the new Motorsizer 4.1 you have now 2 options – "Manual" and "Automatic".

"Manual" is the filtering already used in Motorsizer 4.0.
Here you have to make your own filtering both before calculation and after in the results.

"Automatic" is a new function where the filtering is made in a different and easier way and where you afterwards can filter more to get the solution you are looking for. Here it's easier to see what happens directly and you can easy go back and adjust the parameters again.

6.0 - Manual filtering

The main filter parameters can be set up here:

For the Advanced filtering you can adjust these parameters:

6.1 - Motor

You need to specify what kind of motor you want – AC-Servo (MAC), Stepper motor (MIS) and if it should be with incremental, Absolute single turn or absolute encoder, if it should have option for STO (Safe Torque Off) or brake option and maybe also how you want to control the motor (with Ethernet, Fieldbus or Wireless). For the Stepper motors you can also select if you want the motor with a shaft out in the rear end (Double shaft) for external encoder or hand wheel.

6.2 - Gear

You also may need to specify what type of gear you want for the application or if need to be angled.

6.3 - IP Protection

Here you select the required IP degree for motor housing, motor output shaft and the gear if needed.

6.4 - Supply Voltage

Here you can specify what kind of voltage you want to use for the driver in the motor – AC (1- or 3-phases) or DC.
For the control part you normally always use 24VDC and is not a part of the selection procedure.

6.5 - Performance

The filter parameters above just remove some motor and gear options from what we need to calculate to find the right solutions.
Next step is to calculate the possible options to see if they are within our specifications and these you have to set up. Here is a guideline that hopefully can help you to set them in the best way.

6.6 - Basic Selection

When opening the "*Performance*" window there are 4 basic things available to select or adjust – "*Optimization*", "*Power Rated*" and "*Max Velocity*" and "Inertia ratio".

When "*Optimization*" is **unmarked** you have to set up the rest of the other parameters yourself.

The combination of motor and gear will be put into the calculation selected within this range of "*Power Rated*" and "*Max Velocity*" and "Inertia Ratio".

When the calculation is made for the motor and gear combination they will be checked again if they are in the range for these parameters and the "Advanced" range and if they are, they are put in the result list.

When "*Optimization*" is **marked** you get an extra input ("*Optimization Min Count*") where you select the minimum number of results you want. If you tell only 1 result you only get the "default" calculation for the load which is without gear and motor.

If "Max Velocity" is set to 75% to 100% and the "Power Rated" is set to 50% to 100% it will automatically start searching for results when pressing "Calculate". It will start in the range from 50% to 100% Power Rated and if not finding any or enough results it will search in the range from 45% to 100% until the requested number of results have been found.

In case the "Power Rated" range is 50% to 100% and no results are found it will start searching for results from 45% to 100% and then from 40% to 100% and so on.

In case still not enough results are found the same is done for the velocity range.

"Inertia Ratio – JL/JM" is the ratio between the load inertia and the motor inertia.
This value we use for the MAC motors as "Load" factor which is then this Inertia Ratio +1.
-   For stiff systems with no backlash and very dynamic running the "Inertia Ratio" value could be from 0 to 20 or higher.
    If you need to go to higher values then contact JVL. We have had applications with a ratio of 200 working fine but don't want this to be a standard limit.
-   For Medium systems the range should be 0 to 10.
-   For systems with backlash and not very dynamic it should be in the range of 0 to 3 or less.

When the calculation is made for the motor and gear combination they will be checked again if they are in the range for these parameters and the "Advanced" range and if they are, they are put in the result list.

6.7 - Advanced Selection:

In this section there are some more possibilities to adjust some ranges to get the results you want.

"Power Peak" is default 0% to 100% which means the motor is not at the peak or is at the edge of the motor capability. The lower limit may be increased to you know the motor has to work a little and the upper limit may be decreased a bit to avoid too much heating of the motor.

"Torque Peak" is default 0% to 100%. Same adjustment as for Power Peak.

"Torque Rated" is default 0% to 100%. Same adjustment as for Power Peak.

"Filter Precision on" can be either Repeatable or Absolute and for Belt drive and Lead Screw it's in mm and for Rotary Disc it's Degrees.

And last you can put in a limit of the "Maximum Weight" of the motor and gear combination if needed.

If you make any changes in the filters you need to make a new calculation.

7.0 - Calculation Results

When the calculation has been made and you get some results for possible solutions the list looks like this:

7.1 – Results (1)

The Calculation Result show how many motor and gear possible combinations solutions you have and how many you have selected. This number we use to show how many results will be put into the "Compare" or "Print".

If you select too many different motors there'll be very little space for each but up to at least 6 works fine.

7.2 – Default Calculation (2)

The empty Group " " indicates the default calculation with the default motor with no inertia or friction and with an encoder of 200 counts/revolution. The default gear has a ratio 1:1, no inertia or friction.

This calculation give some idea about the result parameters for the load only and will always be shown together with selected motors in Compare and Print.

If you click the ">" the data are unfolded for this group of motors and you can see all the data selected for the calculation.

First scroll down in the right side of the screen so all the headlines for the parameters are on top and then use the cursor "Left" or "Right" in the bottom of the screen you can see all the data.

If you don't want to see the default data anymore you can close this group clicking at the "ᵛ".

7.3 – Results (3)

Here you have the group of motor and gear combinations that will work for your application.
Here you can also use the ">" and the "ᵛ" to open and closing the group of results.

7.4 - Filters

Each of these columns can be sorted in different ways.

If you click at the column text you can sort between low to high or high to low.

If you click at the 3 dots on top of each other for a parameter you get these options:
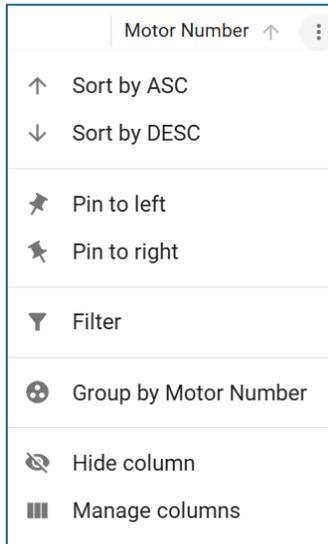
… and these can be used in combination with the "Filter …." next to these values.

If you select "Filter" you get this option:
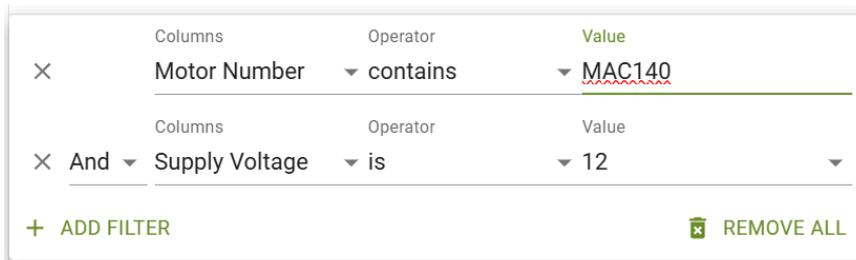
Here you can have more filters

7.5 – Grouped or Tabular

By default the motors are **Grouped** so you have an overview of the types that might be used.
If you want to sort the motors by velocity or power rated (Using 4.) the values are sorted within the group and the groups are also sorted looking at the highest or lowest value within the group.

In case you rather want to ungroup all groups (**Tabular**) you can do this using this button.
Then all motors are sorted one by one and not just within the groups.
Now you can see which solution runs the fastest or which are running with lowest power rated value or you can make filtering directly on all the column parameters.

7.6 – Motor and Gear group

Here you can see the different motor groups when "Grouped" or when you press Grouped and it changes to "Tabular" it shows motor and gear numbers used for the possible solutions.

7.7 - Columns

When pushing this button you can select or deselect the columns to show in the result list.

In the result list you can also drag each column to a new position to make it easier for you to use. These settings are saved locally when you close down Motorsizer.

7.8 – Result Parameters
These columns show the parameters you have selected to look at.
If you scroll all down using the right scroll down column you'll be able to see a scroll right/left possibility in the bottom of the screen and you can then look at the parameters for you.
Here you can also just pull the columns forward or backwards if needed.

7.9 – Download csv-file
When pushing this you can download all the date from what you see on the screen into a csv-file.

8.0 - Automatic filtering

When selecting "Automatic" filtering you have this screen:

Here you can set up the "Assessment Profile" where you can select different prefilters.

You can also select if it should look at possible main supply voltages (Automatic) or just one which you can select.

All motors need 24VDC for the control part and should not be specified in Motorsizer.

8.1 – Assessment Profiles

When using Automatic mode we have made some prefiltering setups you can chose between – "Assessment Profiles".

Here you can see the list. More may be added or removed or just changed if we find it necessary:

Default filter	Filter for most common types	Yes	03/02/2026, 14.21.38 by Peter Nielsen
All solutions	Find all possible solutions	No	03/02/2026, 14.22.28 by Peter Nielsen
Cost-Effective Solutions	Optimized for cost-effectiveness and standard performance requirements	No	03/02/2026, 14.23.29 by Peter Nielsen
DC supplied motors	Motors for DC supply only (12 - 72VDC)	No	03/02/2026, 14.24.22 by Peter Nielsen
AC Supplied motors	Motors for AC supply only (1x115VAC, 1x230VAC and 3x400VAC)	No	03/02/2026, 14.24.45 by Peter Nielsen
RS232 and RS485 Solutions	RS232 and RS485 solutions selected for simple systems	No	03/02/2026, 14.24.56 by Peter Nielsen
Ethernet Solutions	Find Ethernet Solutions only	No	03/02/2026, 14.25.26 by Peter Nielsen
CANopen Solutions	Find CANopen solutions only	No	03/02/2026, 14.25.38 by Peter Nielsen
Dynamic High	High performance with focus on speed and acceleration	No	03/02/2026, 14.26.15 by Peter Nielsen
Dynamic Low	Moderate performance with balanced torque and speed	No	03/02/2026, 14.27.03 by Peter Nielsen
MIS motors with double shaft	MIS motors with double shaft	No	03/02/2026, 14.27.47 by Peter Nielsen

Details of the different filters will be added in the appendix.

8.2 – Calculation

When you have selected one of these filters and pressed Calculate and you have selected which E-mail, Project and Scenario should be used for saving your project it'll take some time to go through all the possible combinations. It might take up to about 30s.

When this is done you'll have a result screen with a number of different combinations of motor and gear solutions. Some motors can run at different voltages but only the calculation with the lowest voltage will be shown because if it can run at 12VDC it can also run at higher voltages.

Be aware that if you select "Ethernet Solutions" or CAN-open also "RS232" Solutions will be shown. The reason for this is that our older MAC motors use modules for Ethernet, CAN open or other protocols which all have RS232 communication and none of the other motors do this and since we don't know which module is used, this is the only way to identify these motors.

MAC050-141-Ax-xxxx-A009 can only be used for Ethernet modules. The rest of motor types can be used for most of the other modules.

When pressing "Dynamic Filters" you'll have a column with some filters for possible solutions within the range of the prefilter settings from the Assessment Profile.

These are the first filters where you can select what is important for the application.
If you need MIS motors or need STO or only DC supplied motors then you can already make a reduction of possible solutions.

In the top you can also see arrow left, right and return to original filter.
Arrow left means you go back to the filter once back and arrow right goes one forward so you can see what has happened between the selection of each filter.
If you have used "MAC" or "MIS" and maybe also some of the others you may need to back to the start (Original) filter.

As you can see in red some of the possible solutions are reducing the possible solutions and you can click on the green or gray buttons and select what you are looking for. When you click any of these buttons you can see the number of solutions increasing or decreasing.

Here is the rest of the list from above where you can see the rest of the filtering:

Motor Power Rated Calc [W]	0.844 - 382 [W]	0.844 - 382 [W]	31900
Motor Power Peak Calc [W]	3.33 - 1592 [W]	3.33 - 1592 [W]	31900
Motor Power Rated [%]	0.583 - 15.1 [%]	0.583 - 15.1 [%]	31900
Motor Torque Rated Calc [Nm]	0.0190 - 3.69 [Nm]	0.0190 - 3.69 [Nm]	31900
Motor Torque Peak Calc [Nm]	0.0360 - 7.05 [Nm]	0.0360 - 7.05 [Nm]	31900
Motor Torque Rated [%]	1.20 - 32.9 [%]	1.20 - 32.9 [%]	31900
Motor Velocity Max Calc [Rpm]	35.9 - 3951 [Rpm]	35.9 - 3951 [Rpm]	31900
Inertia Ratio	0.0280 - 22.0	0.0280 - 22.0	31900
Net Weight [kg]	0 - 56.5 [kg]	0 - 56.5 [kg]	31900
Total Length [mm]	103 - 770 [mm]	103 - 770 [mm]	31900
Total Gear Ratio	2.00 - 220	2.00 - 220	31900
Calculated Total Precision Repeatable [mm/mm/mm]	0.00020 - 0.0390 [mm]	0.00020 - 0.0390 [mm]	31900
Calculated Total Precision Absolute [mm/mm/mm]	0.00080 - 0.0880 [mm]	0.00080 - 0.0880 [mm]	31900

Dark green are the area of values that are within the results.
Light green shows results removed from the possible options.

The filtering of these parameters are maybe a bit more complicated and sometimes you'll need some knowledge of the motors parameters.
Here in this example you end up with 31389 possible solutions for MAC and MIS motors and then have to decide what is best for you.

In general I guess you most of the time will need solutions that are small and also want to use solutions where you use the motors full potential. That means that you select solutions where the weight is low and the Power Rated percentage is high.

Another thing could be that you need a solution where the inertia ratio is low to have a solution that reacts fast and precise.

Also length of motor and gear can be an issue. Here the length is in the direction of the output shaft of the gear if used.

You can either make a better filtering to decrease the number or try to mark some of the motors and use "Compare" to see the results.

9.0 - Example of decreasing number of possible solutions from 31900 to 4.

In many cases you would like to have a small and compact motor and you don't need angled gears.

I have now changed from "Not specified" angled gears to "No". This decrease the number of solutions to 18115.

I still have both very small MAC and MIS motors but also very big ones.

When looking at the "Inertia ratio" I have values from 0.028 to 22. This indicates if the inertia of the load is very small or very big compared to the motor. If your application should be very dynamic you should go for small "inertia ratio" values. In this case I decrease the value to 5.08, which decrease the number of solutions to 13392. I can now see that the very small MIS motors have disappeared from my result list.

To get motors that are smaller and at less costly I try to decrease the "Net Weight" to less than 1.51 kg.

Now I have a reduction of results and only have 142 solutions left. This is small MAC motors and middle range MIS. motors.

When I look at the filters I can now see that I have used the rated power of the motors from 0.735% up to 15.1%.

Using the motor only at a very low percentage doesn't make sense because I could then maybe find a small motor so I increase the lower level to 10.0% which means that the motor is used better and leads to a total number of solutions of 7 which all include MAC050-A.

When I then look at all the different solutions it's the same motor in different options like for Ethernet, color and IP degree.

If I say I don't need IP67 number is decreased to 4 solutions.

With these 4 options you go to PPNB and check what these options are and which to select.
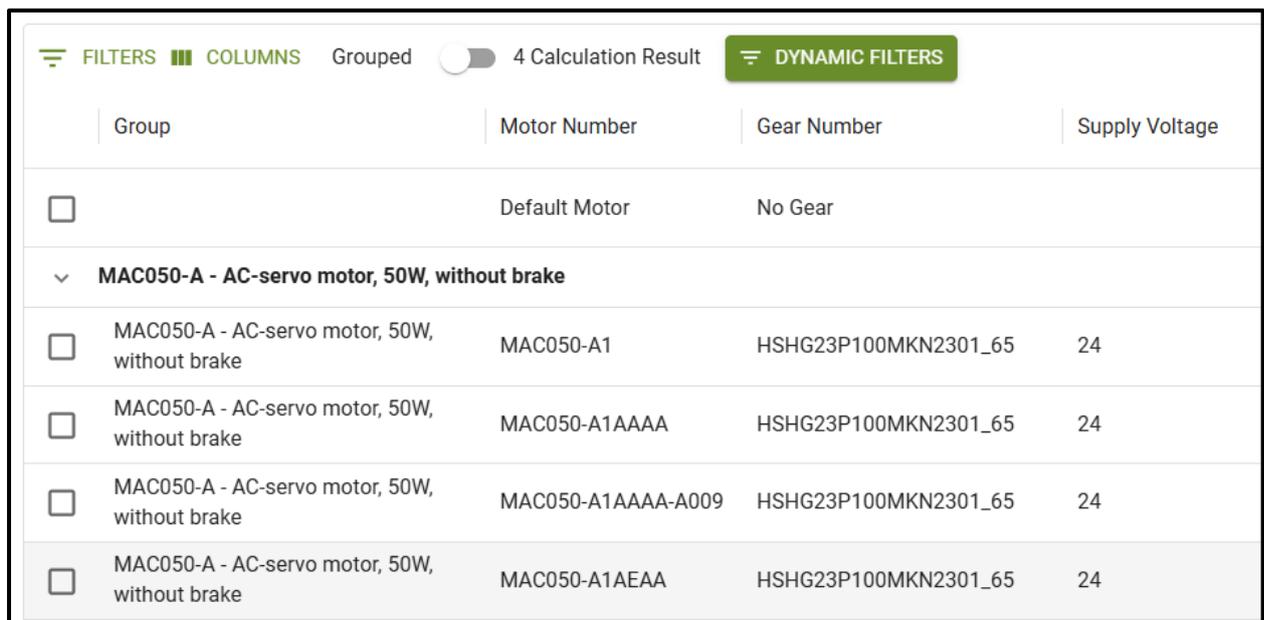
Group	Motor Number	Gear Number	Supply Voltage
☐	Default Motor	No Gear	
⌄ MAC050-A - AC-servo motor, 50W, without brake			
☐ MAC050-A - AC-servo motor, 50W, without brake	MAC050-A1	HSHG23P100MKN2301_65	24
☐ MAC050-A - AC-servo motor, 50W, without brake	MAC050-A1AAAA	HSHG23P100MKN2301_65	24
☐ MAC050-A - AC-servo motor, 50W, without brake	MAC050-A1AAAA-A009	HSHG23P100MKN2301_65	24
☐ MAC050-A - AC-servo motor, 50W, without brake	MAC050-A1AEAA	HSHG23P100MKN2301_65	24

On the next page you can see the final filter settings shown.

Parameters	Options	Selections	Remaining	Controls
Motor Type	MIS, MAC	MIS, MAC	89460	(MIS) (MAC)
MIS Encoders	Incremental and Absolute Singleturn Encoder, Absolute Multiturn Encoder, No Encoder	Incremental and Absolute Singleturn Encoder, Absolute Multiturn Encoder	88328	(Incremental and Absolute Singleturn Encoder) (Absolute Multiturn Encoder) (No Encoder)
Double Shaft	Yes / No / Not Specified	Not Specified	88328	⊟ Not Specified
MAC Encoders	Incremental Encoder, Incremental and Absolute Singleturn Encoder, Absolute Multiturn Encoder	Incremental Encoder, Incremental and Absolute Singleturn Encoder, Absolute Multiturn Encoder	88328	(Incremental Encoder) (Incremental and Absolute Singleturn Encoder) (Absolute Multiturn Encoder)
Brake	Yes / No / Not Specified	Not Specified	88328	⊟ Not Specified
STO (Safe Toque Off)	Yes / No / Not Specified	Not Specified	88328	⊟ Not Specified
Connectivity	RS232, EtherCAT, Profinet, Ethernet IP, RS485, Modbus TCP, Powerlink, IO-Link, CANopen, Sercos, WLAN - MacTalk-Modbus, Bluetooth	RS232, RS485	31900	(RS232) (EtherCAT) (Profinet) (Ethernet IP) (RS485) (Modbus TCP) (Powerlink) (IO-Link) (CANopen) (Sercos) (WLAN - MacTalk-Modbus) (Bluetooth)
Gear Angled	Yes / No / Not Specified	No	18115	☐ No
Gear Type	HTRG, HSHG, HLMT	HTRG, HSHG, HLMT	18115	(HTTW) (HTRG) (HSHG) (HLMT) (HFOS)
IP Protection	IP42, IP55, IP65, IP66, IP67	IP42, IP55, IP65, IP66	16463	(IP42) (IP55) (IP65) (IP66) (IP67)
Supply Voltage ❓	12V, 24V, 36V, 48V, 72V, 1x115V, 1x230V, 3x400V	12V, 24V, 36V, 48V, 72V, 1x115V, 1x230V, 3x400V	16463	(12V) (24V) (36V) (48V) (72V) (1x115V) (1x230V) (3x400V)
Motor Power Rated Calc [W]	0.844 - 382 [W]	0.844 - 382 [W]	16463	●────────●
Motor Power Peak Calc [W]	3.33 - 1592 [W]	3.33 - 1592 [W]	16463	●────────●
Motor Power Rated [%]	0.583 - 15.1 [%]	10.0 - 15.1 [%]	280	──────●──●
Motor Torque Rated Calc [Nm]	0.0190 - 3.69 [Nm]	0.0190 - 3.69 [Nm]	280	●────────●
Motor Torque Peak Calc [Nm]	0.0360 - 7.05 [Nm]	0.0360 - 7.05 [Nm]	280	●────────●
Motor Torque Rated [%]	1.20 - 32.9 [%]	1.20 - 32.9 [%]	280	●────────●
Motor Velocity Max Calc [Rpm]	35.9 - 3951 [Rpm]	35.9 - 3951 [Rpm]	280	●────────●
Inertia Ratio	0.0280 - 22.0	0.0280 - 5.08	210	●──●───────
Net Weight [kg]	0 - 56.5 [kg]	0 - 1.51 [kg]	4	●──●───────
Total Length [mm]	103 - 770 [mm]	103 - 770 [mm]	4	●────────●
Total Gear Ratio	2.00 - 220	2.00 - 220	4	●────────●
Calculated Total Precision Repeatable [mm/mm/mm]	0.00020 - 0.0390 [mm]	0.00020 - 0.0390 [mm]	4	●────────●
Calculated Total Precision Absolute [mm/mm/mm]	0.00080 - 0.0880 [mm]	0.00080 - 0.0880 [mm]	4	●────────●

In case you need more information and have any questions regarding this program then write an E-mail to Support@JVL.DK and we'll come back as soon as possible with an answer.

Appendix for Assessment Profiles (Pre-Filters).

Overview of assessment Profile filters

Default filter	- Filter for most common motor types
All Solutions	- All possible solutions
Cost-Effective Solutions	- Cost effective and standard motors
DC Supplied motors	- Motors DC supplied (12-72 VDC)
AC Supplied motors	- Motors AC supplied (1x115VAC, 1x230VAC, 3 x 400VAC)
RS232 and RS485 Solutions	- Simple control using only RS232 or RS485
Ethernet Solutions	- All Ethernet solutions
CAN-open Solutions	- All CAN-open solutions
Dynamic High	- High performance with focus on speed and acceleration
Dynamic Low	- Moderates performance with balanced torque and speed
MIS motors with double shaft	- Only MIS motors with double shaft.

Overview of assessment Profile filters:

⚙ Assessment Profile Management   ✕

Name	Description	Default	Last Edited	Actions
Default filter	Filter for most common motor types	Yes	10/03/2026, 13.53.42 by Peter Nielsen	↑ ↓ ✎ 🗑
All solutions	Find all possible solutions	No	10/03/2026, 13.53.51 by Peter Nielsen	↑ ↓ ✎ 🗑
Cost-Effective Solutions	Optimized for cost-effectiveness and standard performance requirements	No	10/03/2026, 13.54.23 by Peter Nielsen	↑ ↓ ✎ 🗑
DC supplied motors	Motors for DC supply only (12 - 72VDC)	No	10/03/2026, 13.54.31 by Peter Nielsen	↑ ↓ ✎ 🗑
AC Supplied motors	Motors for AC supply only (1x115VAC, 1x230VAC and 3x400VAC)	No	10/03/2026, 13.54.43 by Peter Nielsen	↑ ↓ ✎ 🗑
RS232 and RS485 Solutions	RS232 and RS485 solutions selected for simple systems	No	10/03/2026, 13.54.54 by Peter Nielsen	↑ ↓ ✎ 🗑
Ethernet Solutions	Find Ethernet Solutions only	No	10/03/2026, 13.55.14 by Peter Nielsen	↑ ↓ ✎ 🗑
CANopen Solutions	Find CANopen solutions only	No	10/03/2026, 13.55.27 by Peter Nielsen	↑ ↓ ✎ 🗑
Dynamic High	High performance with focus on speed and acceleration	No	10/03/2026, 13.55.48 by Peter Nielsen	↑ ↓ ✎ 🗑
Dynamic Low	Moderate performance with balanced torque and speed	No	10/03/2026, 13.55.59 by Peter Nielsen	↑ ↓ ✎ 🗑
MIS motors with double shaft	MIS motors with double shaft	No	10/03/2026, 13.56.14 by Peter Nielsen	↑ ↓ ✎ 🗑

Default filter:

Parameter	Control
Motor Type	MIS MAC
Double Shaft	☐ No
Brake	☐ No
STO (Safe Toque Off)	☐ No
Gear Angled	☐ No
Gear Type	No Gear HGKG HTRG HSHG HEEW HTTW HFOS HLMT
MIS Encoders	No Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
MAC Encoders	Incremental Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
Connectivity	EtherCAT Ethernet IP Modbus TCP Profinet Powerlink Sercos CANopen Devicenet Profibus WLAN - MacTalk-Modbus Bluetooth RS232 RS485 Clock-Direction IO-Link
IP Protection	IP42 IP55 IP65 IP66 IP67 IP69K
Supply Voltages	12V 24V 36V 48V 72V 1x115V 1x230V 3x400V
Motor Power Rated Calc [W]	0 - 7500 W #
Motor Power Peak Calc [W]	0 - 22000 W #
Motor Power Rated [%]	0 - 100% %
Motor Torque Rated Calc [Nm]	0 - 30 Nm #
Motor Torque Peak Calc [Nm]	0 - 100 Nm #
Motor Torque Rated [%]	0 - 100% %
Motor Velocity Max Calc [Rpm]	0 - 4800 Rpm #
Inertia Ratio	0.0 - 20.0 #
Net Weight [kg]	0.0 - 150.0 kg #
Total Length [mm]	0 - 1000 mm #
Total Gear Ratio	0.0 - 1000.0 #
Calculated Total Precision Repeatable	0.00 - 10.00 mm #
Calculated Total Precision Absolute	0.00 - 10.00 mm #

All Solutions

Parameter	Control
Motor Type	MIS MAC
Double Shaft	▬ Not Specified
Brake	▬ Not Specified
STO (Safe Toque Off)	▬ Not Specified
Gear Angled	▬ Not Specified
Gear Type	No Gear HGKG HTRG HSHG HEEW HTTW HFOS HLMT
MIS Encoders	No Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
MAC Encoders	Incremental Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
Connectivity	EtherCAT Ethernet IP Modbus TCP Profinet Powerlink Sercos CANopen Devicenet Profibus WLAN - MacTalk-Modbus Bluetooth RS232 RS485 Clock-Direction IO-Link
IP Protection	IP42 IP55 IP65 IP66 IP67 IP69K
Supply Voltages	12V 24V 36V 48V 72V 1x115V 1x230V 3x400V
Motor Power Rated Calc [W]	0 - 7500 W
Motor Power Peak Calc [W]	0 - 22000 W
Motor Power Rated [%]	0 - 100%
Motor Torque Rated Calc [Nm]	0 - 30 Nm
Motor Torque Peak Calc [Nm]	0 - 100 Nm
Motor Torque Rated [%]	0 - 100%
Motor Velocity Max Calc [Rpm]	0 - 7000 Rpm
Inertia Ratio	0.0 - 200.0
Net Weight [kg]	0.0 - 150.0 kg
Total Length [mm]	0 - 1000 mm
Total Gear Ratio	0.0 - 1000.0
Calculated Total Precision Repeatable	0.00 - 10.00 mm
Calculated Total Precision Absolute	0.00 - 10.00 mm

Cost-Effective Solutions

Parameter	Control		
Motor Type	MIS MAC		
Double Shaft	☐ No		
Brake	☐ No		
STO (Safe Toque Off)	☐ No		
Gear Angled	☐ No		
Gear Type	No Gear HGKG HTRG HSHG HEEW HTTW HFOS HLMT		
MIS Encoders	No Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder		
MAC Encoders	Incremental Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder		
Connectivity	EtherCAT Ethernet IP Modbus TCP Profinet Powerlink Sercos CANopen Devicenet Profibus WLAN - MacTalk-Modbus Bluetooth RS232 RS485 Clock-Direction IO-Link		
IP Protection	IP42 IP55 IP65 IP66 IP67 IP69K		
Supply Voltages	12V 24V 36V 48V 72V 1x115V 1x230V 3x400V		
Motor Power Rated Calc [W]	0 - 7500 W		#
Motor Power Peak Calc [W]	0 - 22000 W		#
Motor Power Rated [%]	0 - 100%		%
Motor Torque Rated Calc [Nm]	0 - 30 Nm		#
Motor Torque Peak Calc [Nm]	0 - 100 Nm		#
Motor Torque Rated [%]	0 - 100%		%
Motor Velocity Max Calc [Rpm]	0 - 4800 Rpm		#
Inertia Ratio	0.0 - 200.0		#
Net Weight [kg]	0.0 - 20.0%		%
Total Length [mm]	0 - 1000 mm		#
Total Gear Ratio	0.0 - 1000.0		#
Calculated Total Precision Repeatable	0.00 - 10.00 mm		#
Calculated Total Precision Absolute	0.00 - 10.00 mm		#

DC Supplied motors

Parameter	Control
Motor Type	MIS MAC
Double Shaft	▬ Not Specified
Brake	▬ Not Specified
STO (Safe Toque Off)	▬ Not Specified
Gear Angled	▬ Not Specified
Gear Type	No Gear HGKG HTRG HSHG HEEW HTTW HFOS HLMT
MIS Encoders	No Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
MAC Encoders	Incremental Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
Connectivity	EtherCAT Ethernet IP Modbus TCP Profinet Powerlink Sercos CANopen Devicenet Profibus WLAN - MacTalk-Modbus Bluetooth RS232 RS485 Clock-Direction IO-Link
IP Protection	IP42 IP55 IP65 IP66 IP67 IP69K
Supply Voltages	12V 24V 36V 48V 72V 1x115V 1x230V 3x400V
Motor Power Rated Calc [W]	0 - 7500 W
Motor Power Peak Calc [W]	0 - 22000 W
Motor Power Rated [%]	0 - 100%
Motor Torque Rated Calc [Nm]	0 - 30 Nm
Motor Torque Peak Calc [Nm]	0 - 100 Nm
Motor Torque Rated [%]	0 - 100%
Motor Velocity Max Calc [Rpm]	0 - 4801 Rpm
Inertia Ratio	0.0 - 200.0
Net Weight [kg]	0.0 - 150.0 kg
Total Length [mm]	0 - 1000 mm
Total Gear Ratio	0.0 - 1000.0
Calculated Total Precision Repeatable	0.00 - 10.00 mm
Calculated Total Precision Absolute	0.00 - 10.00 mm

AC Supplied motors

Parameter	Control
Motor Type	MIS MAC
Double Shaft	☐ Not Specified
Brake	☐ Not Specified
STO (Safe Toque Off)	☐ Not Specified
Gear Angled	☐ Not Specified
Gear Type	No Gear HGKG HTRG HSHG HEEW HTTW HFOS HLMT
MIS Encoders	No Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
MAC Encoders	Incremental Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
Connectivity	EtherCAT Ethernet IP Modbus TCP Profinet Powerlink Sercos CANopen Devicenet Profibus WLAN - MacTalk-Modbus Bluetooth RS232 RS485 Clock-Direction IO-Link
IP Protection	IP42 IP55 IP65 IP66 IP67 IP69K
Supply Voltages	12V 24V 36V 48V 72V 1x115V 1x230V 3x400V
Motor Power Rated Calc [W]	0 - 7500 W
Motor Power Peak Calc [W]	0 - 22000 W
Motor Power Rated [%]	0 - 100%
Motor Torque Rated Calc [Nm]	0 - 30 Nm
Motor Torque Peak Calc [Nm]	0 - 100 Nm
Motor Torque Rated [%]	0 - 100%
Motor Velocity Max Calc [Rpm]	0 - 4801 Rpm
Inertia Ratio	0.0 - 200.0
Net Weight [kg]	0.0 - 150.0 kg
Total Length [mm]	0 - 1000 mm
Total Gear Ratio	0.0 - 1000.0
Calculated Total Precision Repeatable	0.00 - 10.00 mm
Calculated Total Precision Absolute	0.00 - 10.00 mm

RS232 and RS485 Solutions

Parameter	Control			
Motor Type	MIS MAC			
Double Shaft	▬ Not Specified			
Brake	▬ Not Specified			
STO (Safe Toque Off)	▬ Not Specified			
Gear Angled	▬ Not Specified			
Gear Type	No Gear HGKG HTRG HSHG HEEW HTTW HFOS HLMT			
MIS Encoders	No Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder			
MAC Encoders	Incremental Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder			
Connectivity	EtherCAT Ethernet IP Modbus TCP Profinet Powerlink Sercos CANopen Devicenet Profibus WLAN - MacTalk-Modbus Bluetooth RS232 RS485 Clock-Direction IO-Link			
IP Protection	IP42 IP55 IP65 IP66 IP67 IP69K			
Supply Voltages	12V 24V 36V 48V 72V 1x115V 1x230V 3x400V			
Motor Power Rated Calc [W]	0 - 7500 W		# ⬤
Motor Power Peak Calc [W]	0 - 22000 W		# ⬤
Motor Power Rated [%]	0 - 100%		% ⬤
Motor Torque Rated Calc [Nm]	0 - 30 Nm		# ⬤
Motor Torque Peak Calc [Nm]	0 - 100 Nm		# ⬤
Motor Torque Rated [%]	0 - 100%		% ⬤
Motor Velocity Max Calc [Rpm]	0 - 4800 Rpm		# ⬤
Inertia Ratio	0.0 - 200.0		# ⬤
Net Weight [kg]	0.0 - 150.0 kg		# ⬤
Total Length [mm]	0 - 1000 mm		# ⬤
Total Gear Ratio	0.0 - 1000.0		# ⬤
Calculated Total Precision Repeatable	0.00 - 10.00 mm		# ⬤
Calculated Total Precision Absolute	0.00 - 10.00 mm		# ⬤

Ethernet Solutions

Parameter	Control
Motor Type	MIS MAC
Double Shaft	▬ Not Specified
Brake	▬ Not Specified
STO (Safe Toque Off)	▬ Not Specified
Gear Angled	▬ Not Specified
Gear Type	No Gear HGKG HTRG HSHG HEEW HTTW HFOS HLMT
MIS Encoders	No Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
MAC Encoders	Incremental Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
Connectivity	EtherCAT Ethernet IP Modbus TCP Profinet Powerlink Sercos CANopen Devicenet Profibus WLAN - MacTalk-Modbus Bluetooth RS232 RS485 Clock-Direction IO-Link
IP Protection	IP42 IP55 IP65 IP66 IP67 IP69K
Supply Voltages	12V 24V 36V 48V 72V 1x115V 1x230V 3x400V
Motor Power Rated Calc [W]	0 - 7500 W
Motor Power Peak Calc [W]	0 - 100%
Motor Power Rated [%]	0 - 100%
Motor Torque Rated Calc [Nm]	0 - 30 Nm
Motor Torque Peak Calc [Nm]	0 - 100 Nm
Motor Torque Rated [%]	0 - 100%
Motor Velocity Max Calc [Rpm]	0 - 4807 Rpm
Inertia Ratio	0.0 - 200.0
Net Weight [kg]	0.0 - 150.0 kg
Total Length [mm]	0 - 1000 mm
Total Gear Ratio	0.0 - 994.0
Calculated Total Precision Repeatable	0.00 - 10.00 mm
Calculated Total Precision Absolute	0.00 - 10.00 mm

CAN-open Solutions

Parameter	Control
Motor Type	MIS MAC
Double Shaft	⊟ Not Specified
Brake	⊟ Not Specified
STO (Safe Toque Off)	⊟ Not Specified
Gear Angled	⊟ Not Specified
Gear Type	No Gear HGKG HTRG HSHG HEEW HTTW HFOS HLMT
MIS Encoders	No Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
MAC Encoders	Incremental Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
Connectivity	EtherCAT Ethernet IP Modbus TCP Profinet Powerlink Sercos CANopen Devicenet Profibus WLAN - MacTalk-Modbus Bluetooth RS232 RS485 Clock-Direction IO-Link
IP Protection	IP42 IP55 IP65 IP66 IP67 IP69K
Supply Voltages	12V 24V 36V 48V 72V 1x115V 1x230V 3x400V
Motor Power Rated Calc [W]	0 - 7500 W #○
Motor Power Peak Calc [W]	0 - 22000 W #○
Motor Power Rated [%]	0 - 100% %●
Motor Torque Rated Calc [Nm]	0 - 30 Nm #○
Motor Torque Peak Calc [Nm]	0 - 100 Nm #○
Motor Torque Rated [%]	0 - 100% %●
Motor Velocity Max Calc [Rpm]	0 - 4800 Rpm #○
Inertia Ratio	0.0 - 200.0 #○
Net Weight [kg]	0.0 - 150.0 kg #○
Total Length [mm]	0 - 1000 mm #○
Total Gear Ratio	0.0 - 1000.0 #○
Calculated Total Precision Repeatable	0.00 - 10.00 mm #○
Calculated Total Precision Absolute	0.00 - 10.00 mm #○

Dynamic High

Parameter	Control
Motor Type	MIS MAC
Double Shaft	▬ Not Specified
Brake	▬ Not Specified
STO (Safe Toque Off)	▬ Not Specified
Gear Angled	▬ Not Specified
Gear Type	No Gear HGKG HTRG HSHG HEEW HTTW HFOS HLMT
MIS Encoders	No Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
MAC Encoders	Incremental Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
Connectivity	EtherCAT Ethernet IP Modbus TCP Profinet Powerlink Sercos CANopen Devicenet Profibus WLAN - MacTalk-Modbus Bluetooth RS232 RS485 Clock-Direction IO-Link
IP Protection	IP42 IP55 IP65 IP66 IP67 IP69K
Supply Voltages	12V 24V 36V 48V 72V 1x115V 1x230V 3x400V
Motor Power Rated Calc [W]	0 - 7500 W #
Motor Power Peak Calc [W]	0 - 22000 W #
Motor Power Rated [%]	0 - 100% %
Motor Torque Rated Calc [Nm]	0 - 200 Nm #
Motor Torque Peak Calc [Nm]	0 - 400 Nm #
Motor Torque Rated [%]	0 - 100% %
Motor Velocity Max Calc [Rpm]	0 - 4800 Rpm #
Inertia Ratio	0.0 - 10.0 #
Net Weight [kg]	0.0 - 150.0 kg #
Total Length [mm]	0 - 1000 mm #
Total Gear Ratio	0.0 - 1000.0 #
Calculated Total Precision Repeatable	0.00 - 10.00 mm #
Calculated Total Precision Absolute	0.00 - 10.00 mm #

Dynamic Low

Parameter	Control
Motor Type	MIS MAC
Double Shaft	▬ Not Specified
Brake	▬ Not Specified
STO (Safe Toque Off)	▬ Not Specified
Gear Angled	▬ Not Specified
Gear Type	No Gear HGKG HTRG HSHG HEEW HTTW HFOS HLMT
MIS Encoders	No Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
MAC Encoders	Incremental Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
Connectivity	EtherCAT Ethernet IP Modbus TCP Profinet Powerlink Sercos CANopen Devicenet Profibus WLAN - MacTalk-Modbus Bluetooth RS232 RS485 Clock-Direction IO-Link
IP Protection	IP42 IP55 IP65 IP66 IP67 IP69K
Supply Voltages	12V 24V 36V 48V 72V 1x115V 1x230V 3x400V
Motor Power Rated Calc [W]	0 - 7500 W #
Motor Power Peak Calc [W]	0 - 22000 W #
Motor Power Rated [%]	0 - 100% %
Motor Torque Rated Calc [Nm]	0 - 200 Nm #
Motor Torque Peak Calc [Nm]	0 - 400 Nm #
Motor Torque Rated [%]	0 - 100% %
Motor Velocity Max Calc [Rpm]	0 - 4800 Rpm #
Inertia Ratio	0.0 - 29.9 #
Net Weight [kg]	0.0 - 150.0 kg #
Total Length [mm]	0 - 1000 mm #
Total Gear Ratio	0.0 - 1000.0 #
Calculated Total Precision Repeatable	0.00 - 10.00 mm #
Calculated Total Precision Absolute	0.00 - 10.00 mm #

MIS motors with double shaft

Parameter	Control
Motor Type	MIS MAC
Double Shaft	☑ Yes
Brake	⊟ Not Specified
STO (Safe Toque Off)	⊟ Not Specified
Gear Angled	⊟ Not Specified
Gear Type	No Gear HGKG HTRG HSHG HEEW HTTW HFOS HLMT
MIS Encoders	No Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
MAC Encoders	Incremental Encoder Incremental and Absolute Singleturn Encoder Absolute Multiturn Encoder
Connectivity	EtherCAT Ethernet IP Modbus TCP Profinet Powerlink Sercos CANopen Devicenet Profibus WLAN - MacTalk-Modbus Bluetooth RS232 RS485 Clock-Direction IO-Link
IP Protection	IP42 IP55 IP65 IP66 IP67 IP69K
Supply Voltages	12V 24V 36V 48V 72V 1x115V 1x230V 3x400V
Motor Power Rated Calc [W]	0 - 7500 W
Motor Power Peak Calc [W]	0 - 22000 W
Motor Power Rated [%]	0 - 100%
Motor Torque Rated Calc [Nm]	0 - 30 Nm
Motor Torque Peak Calc [Nm]	0 - 100 Nm
Motor Torque Rated [%]	0 - 100%
Motor Velocity Max Calc [Rpm]	0 - 3005 Rpm
Inertia Ratio	0.0 - 200.0
Net Weight [kg]	0.0 - 150.0 kg
Total Length [mm]	0 - 1000 mm
Total Gear Ratio	0.0 - 1000.0
Calculated Total Precision Repeatable	0.00 - 10.00 mm
Calculated Total Precision Absolute	0.00 - 10.00 mm