YASKAWA

II Ogólnopolski Konkurs Robotyki Przemysłowej

WARSZTATY YASKAWA

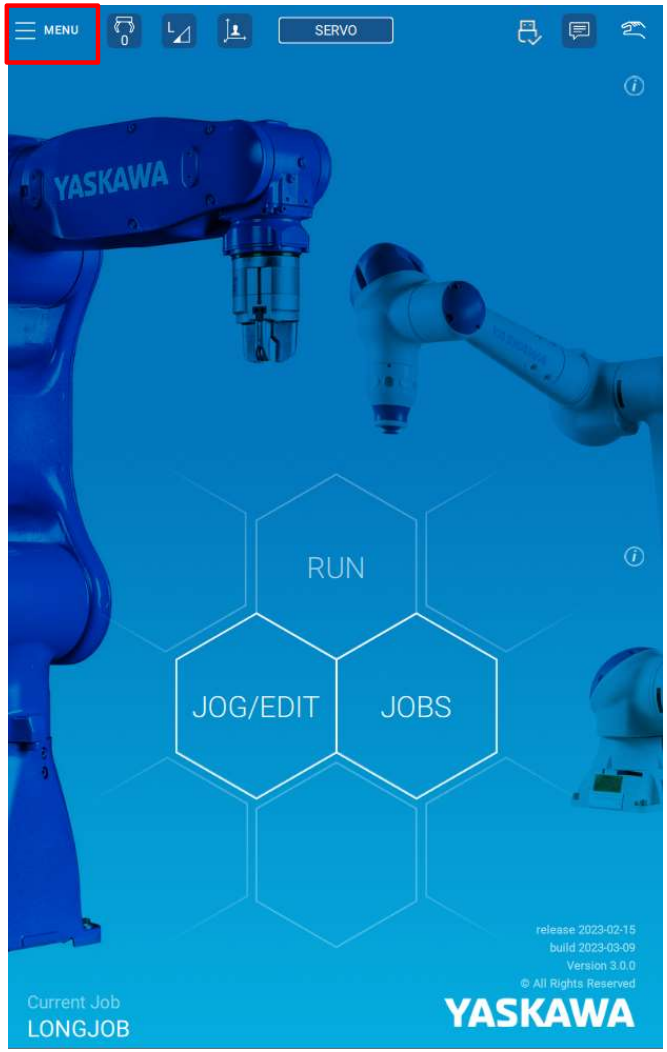
Karolina Krupnicka
Product Support Engineer

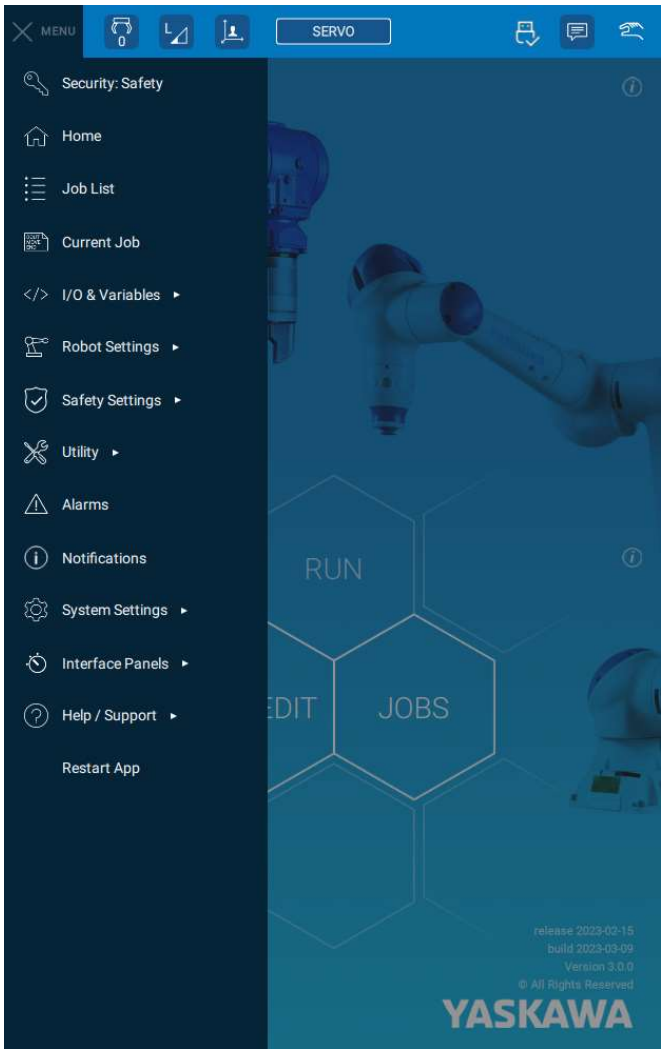
Yaskawa Polska

Polski oddział światowego lidera

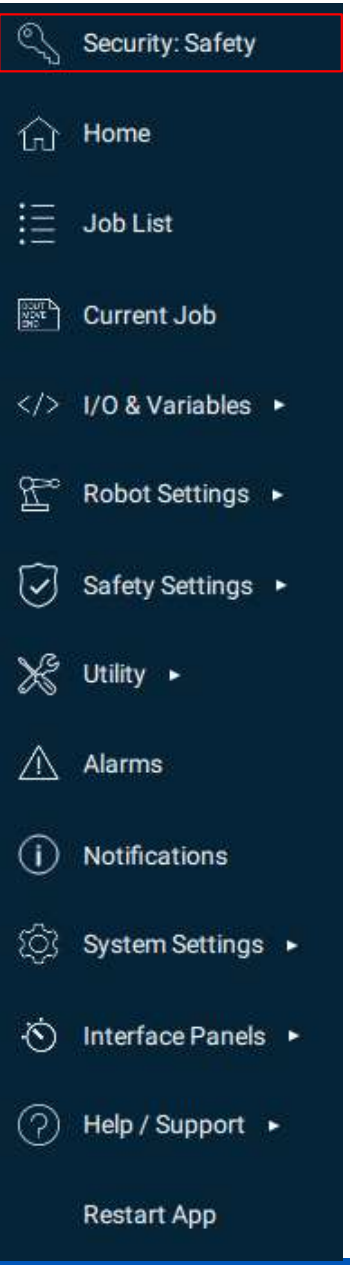
TEACH PENDANT VS SMART PENDANT

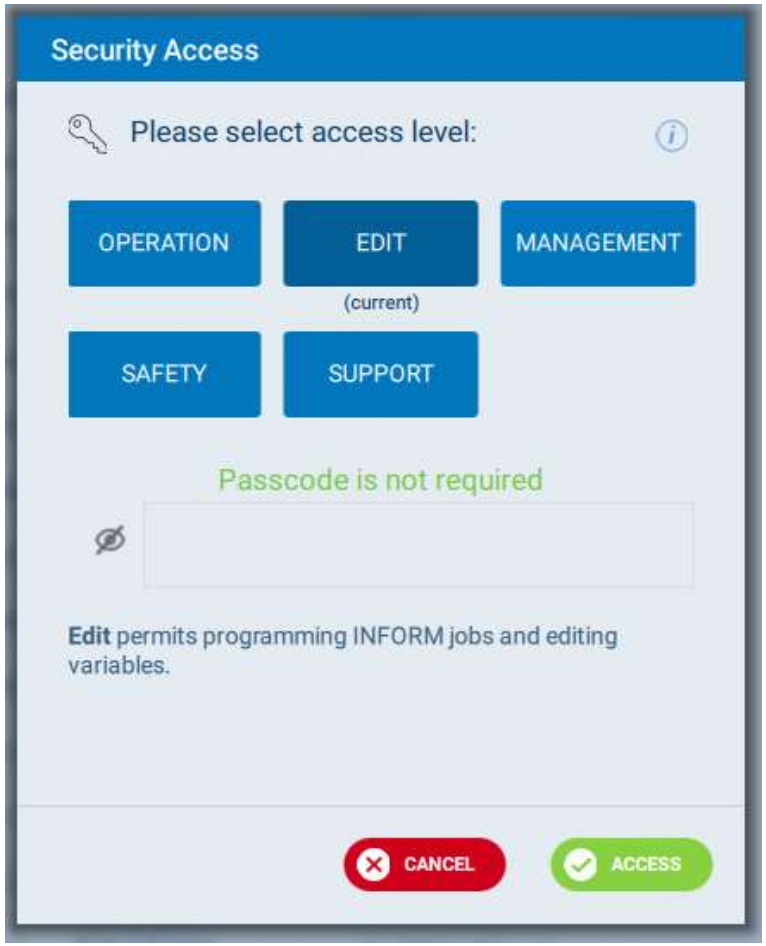
HOME SCREEN

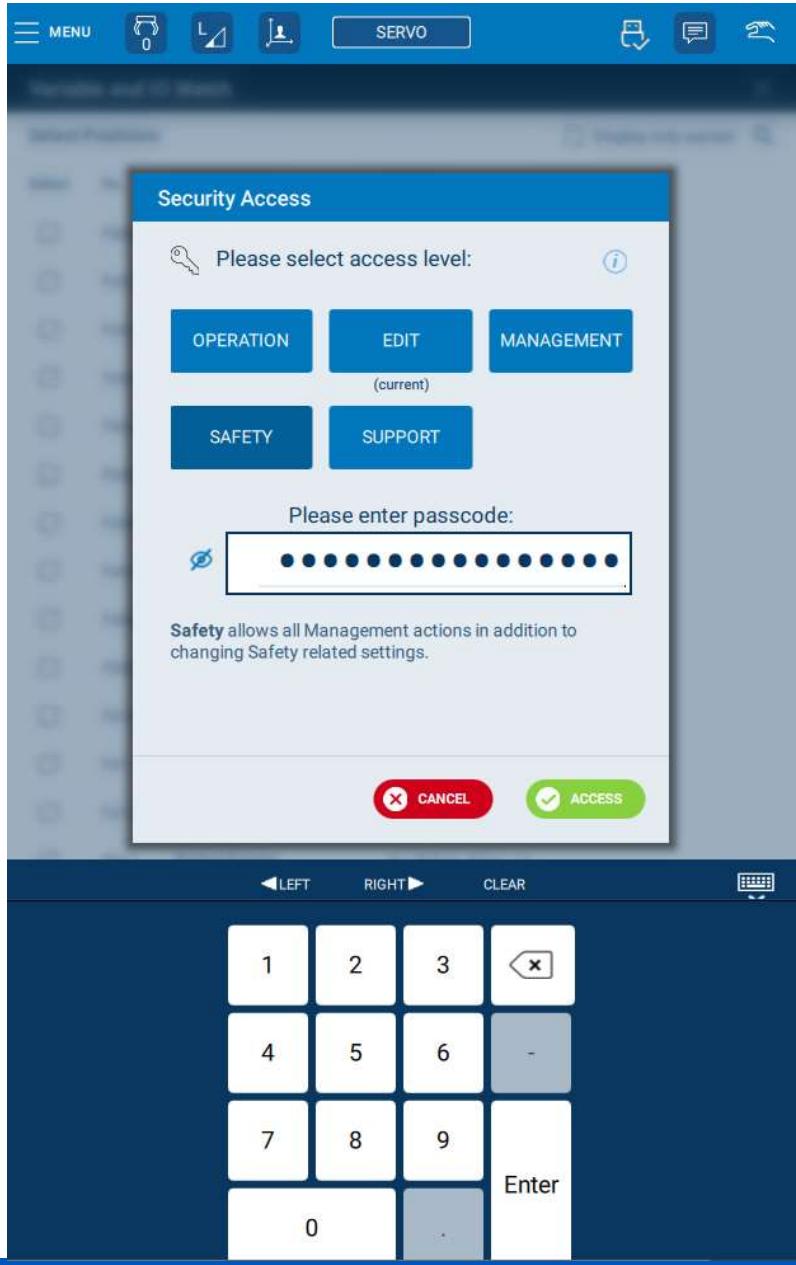




SECURITY

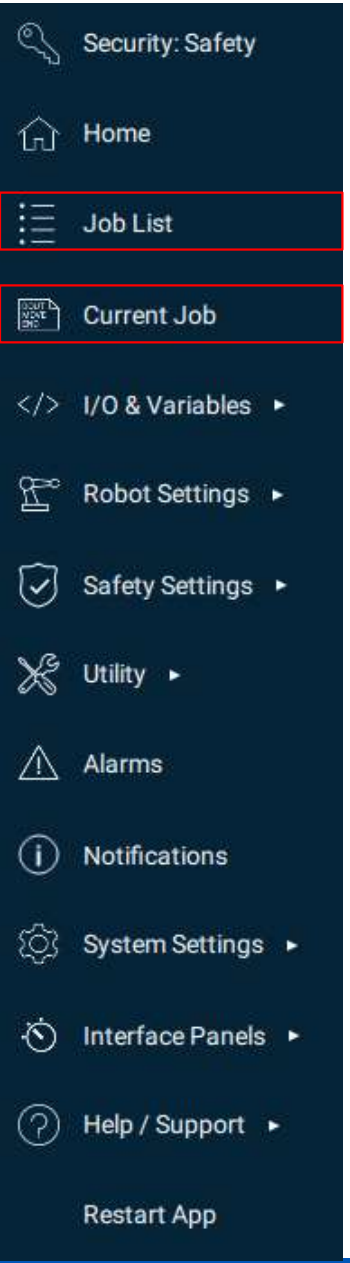


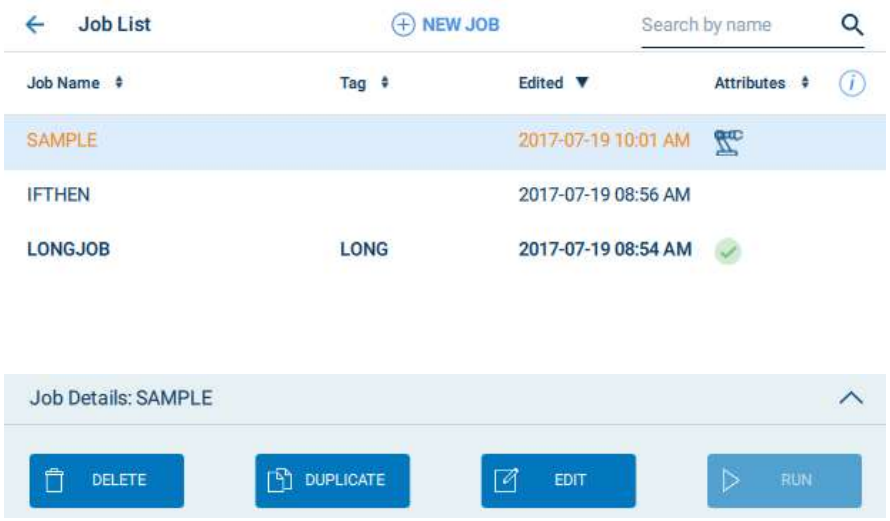


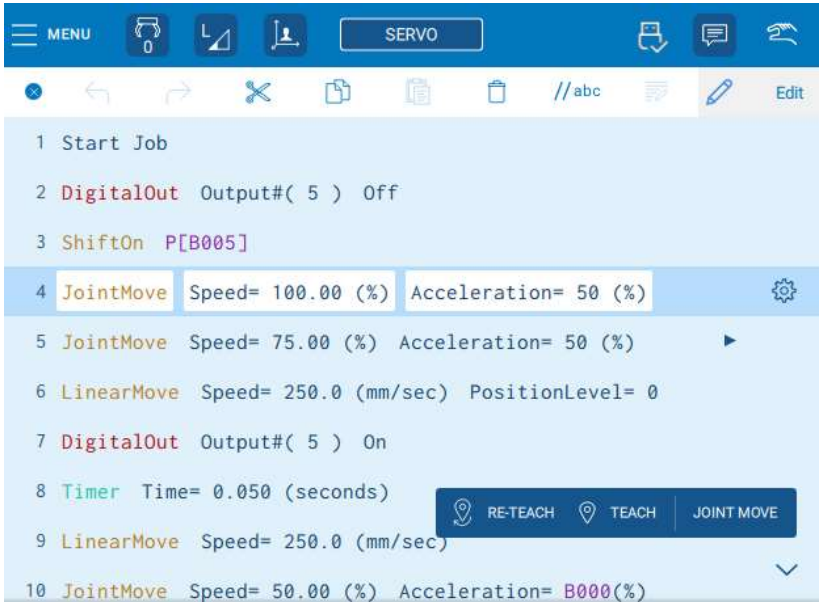


DEFAULT EDIT MODE
NO PASSWORD REQUIRED

JOB LIST & CURRENT JOB

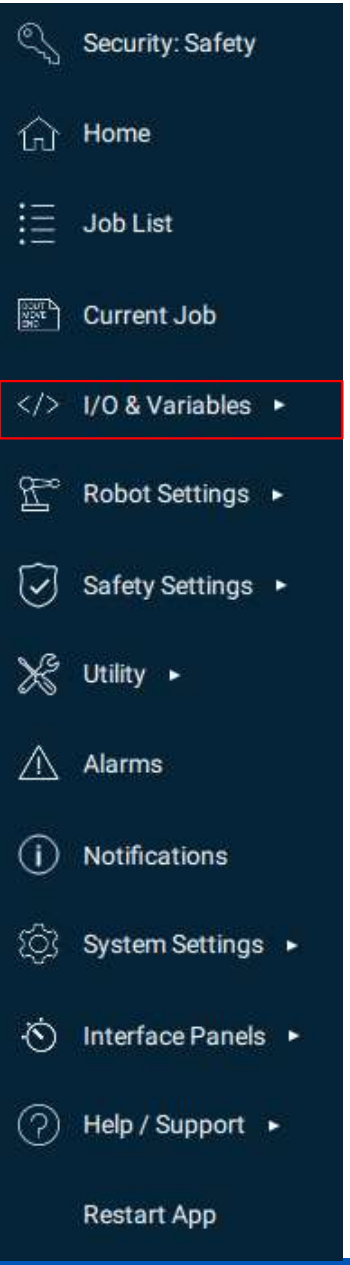


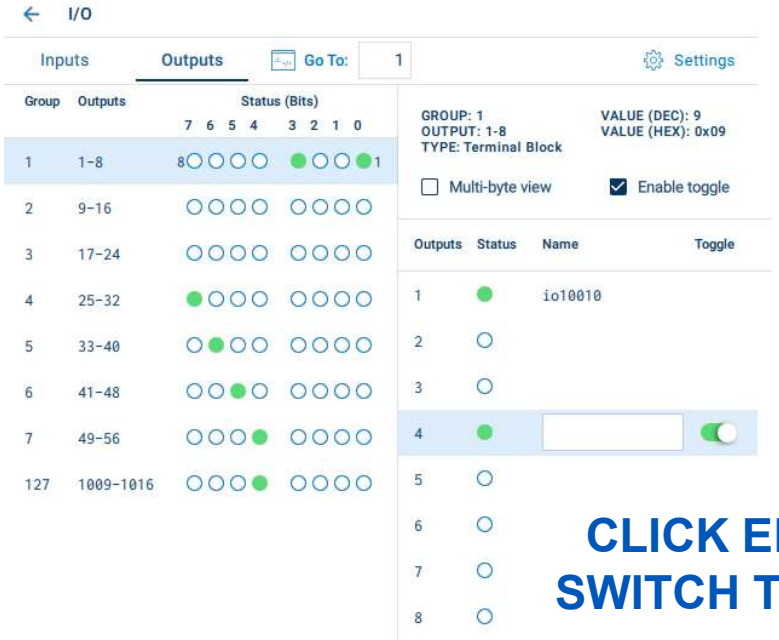


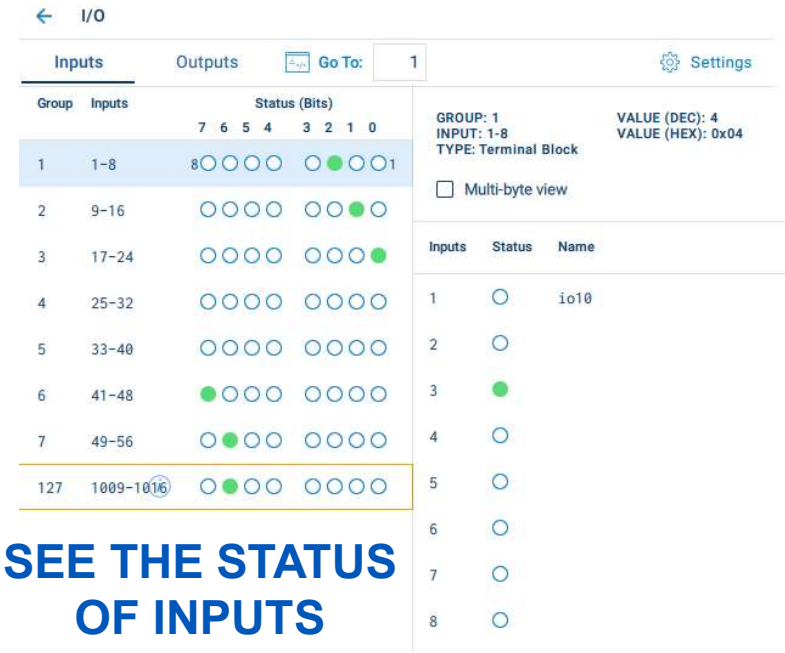


USE CURRENT JOB IN MENU
TO CHANGE SCREEN
TO LAST EDITING JOB

I/O & VARIABLES



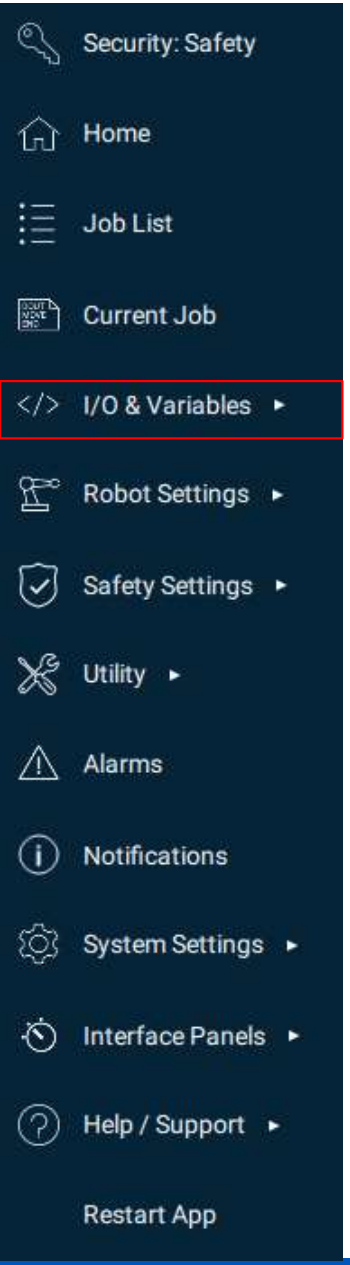




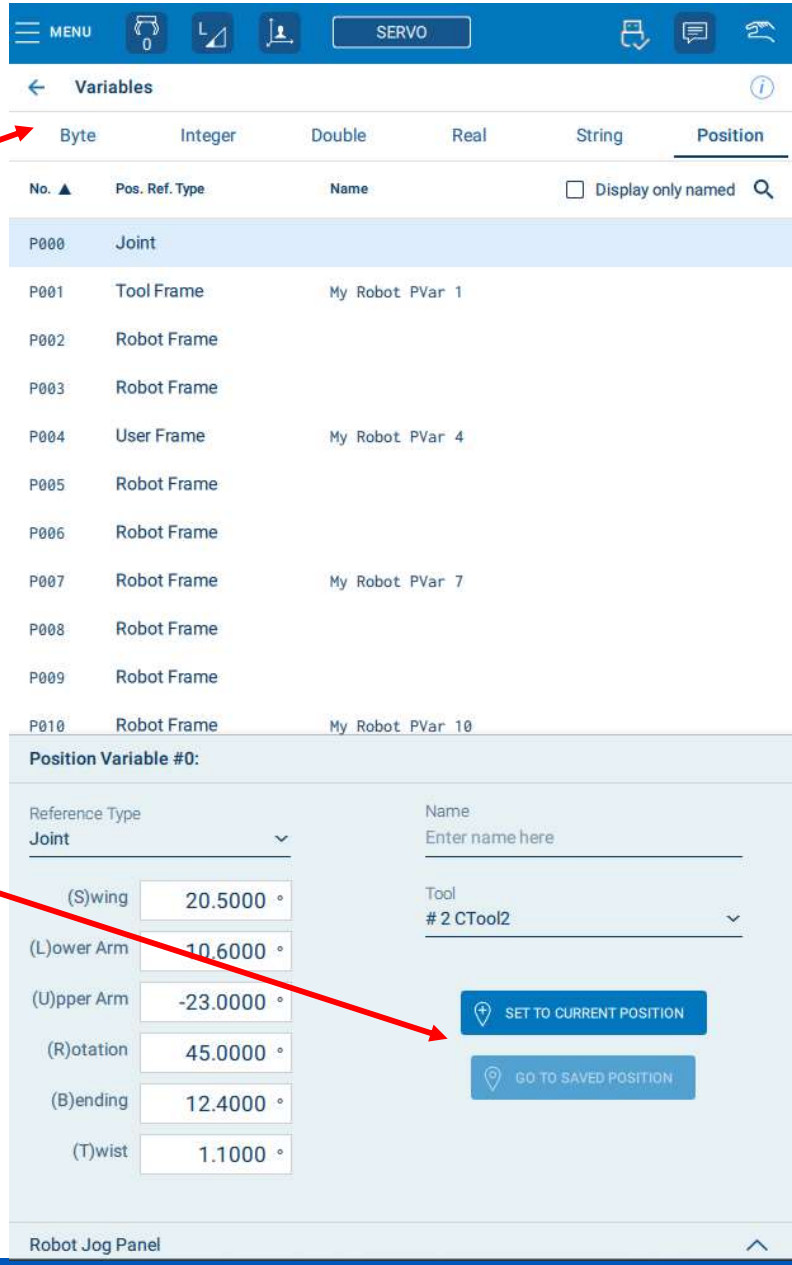
SEE THE STATUS OF INPUTS

CLICK ENABLE TOOGLE & TOOGLE SWITCH TO CHANGE OUTPUT STATUS

I/O & VARIABLES

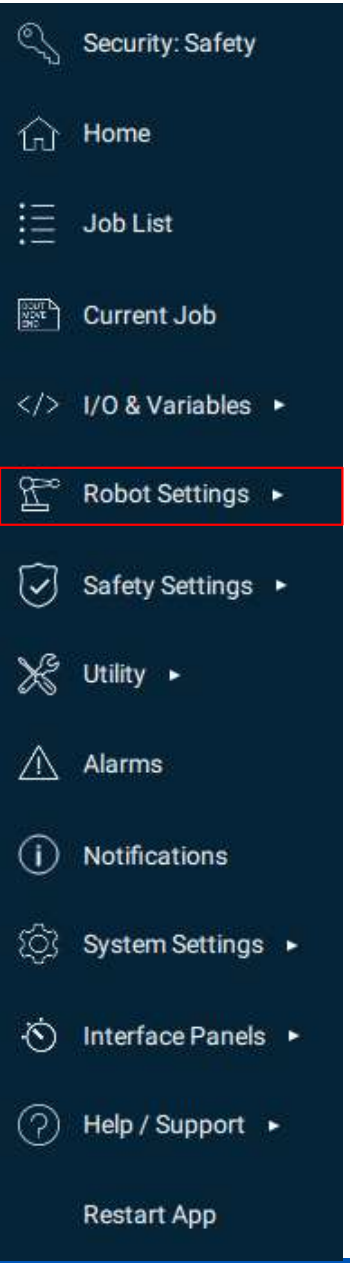


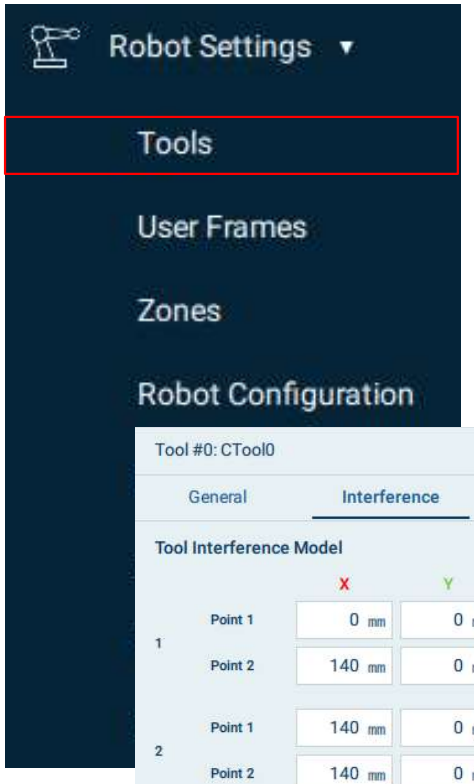
CHOOSE TYPE OF VARIABLE

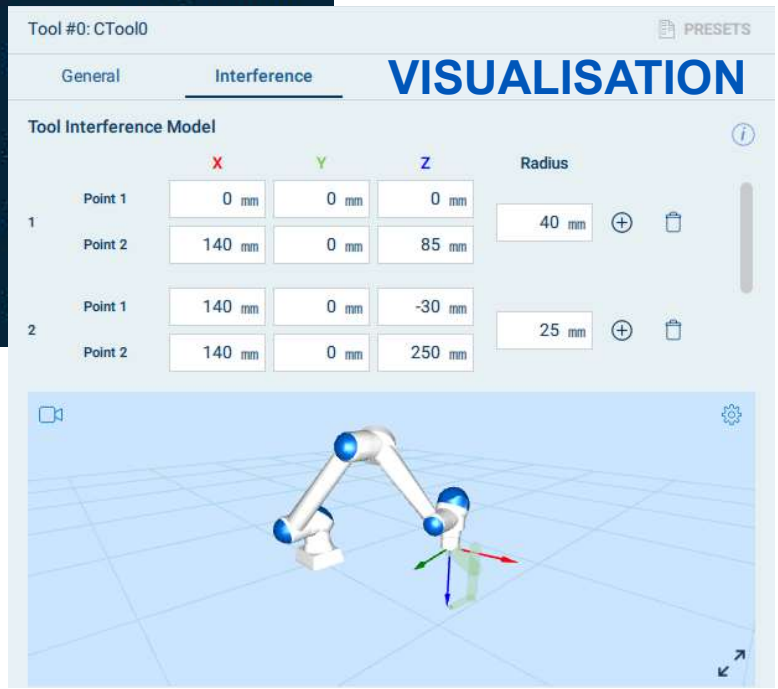


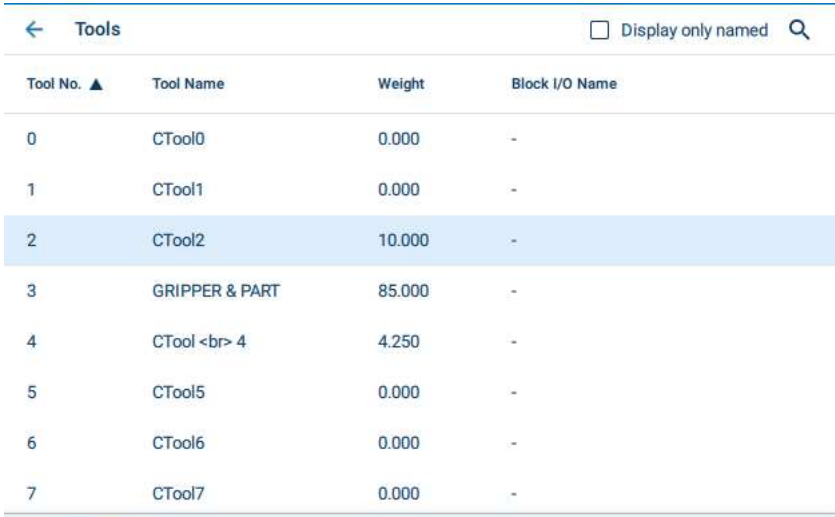
SET POSITION VARIABLE TO CURRENT POSITION OR GO TO SAVED POSITION

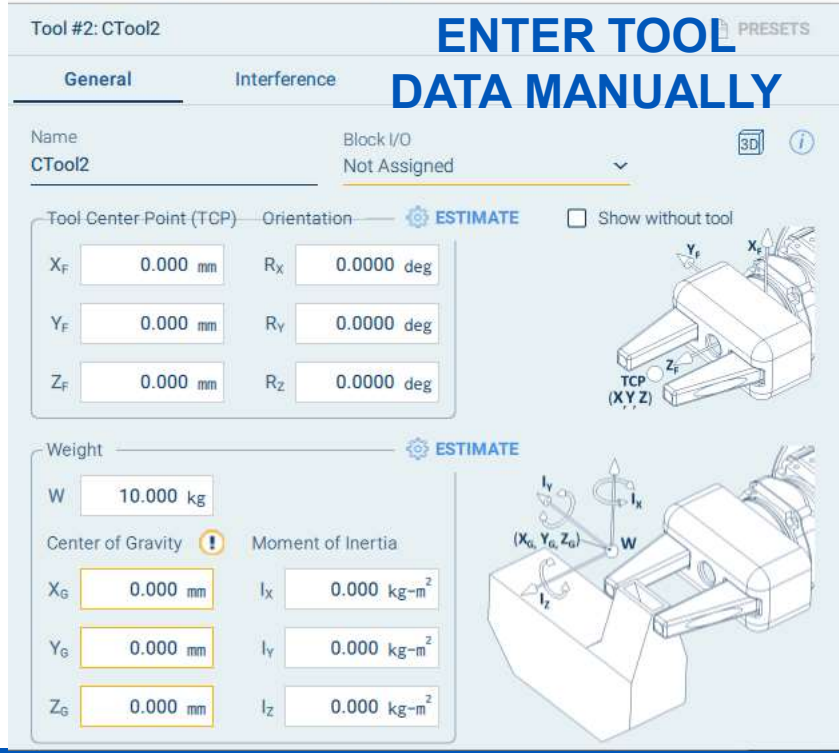
ROBOT SETTINGS -> TOOLS



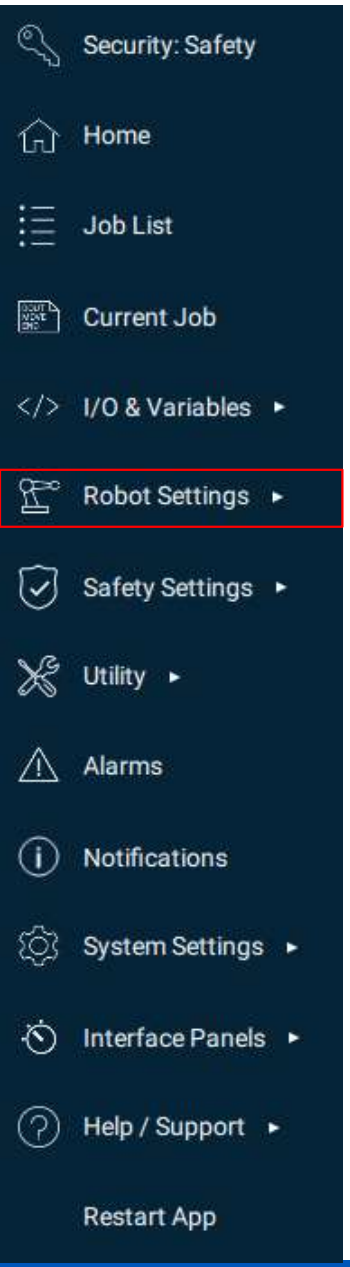




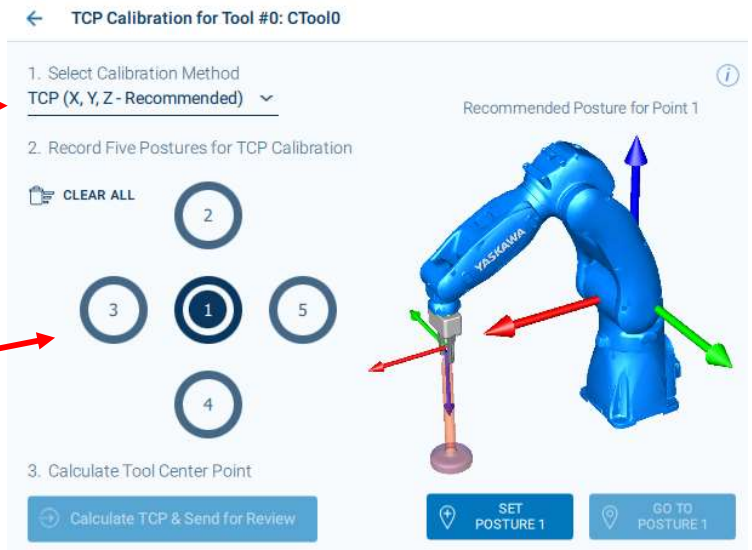




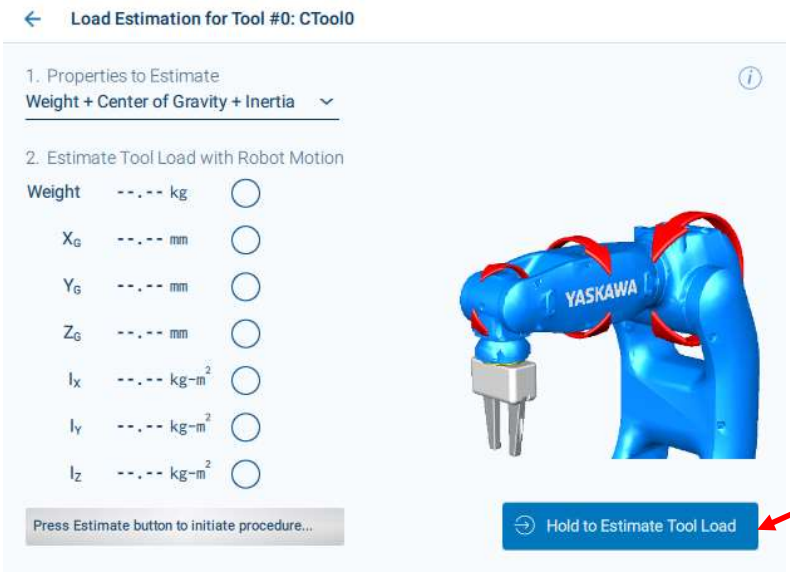
ROBOT SETTINGS -> TOOLS



CHOOSE CALIBRATION METHOD

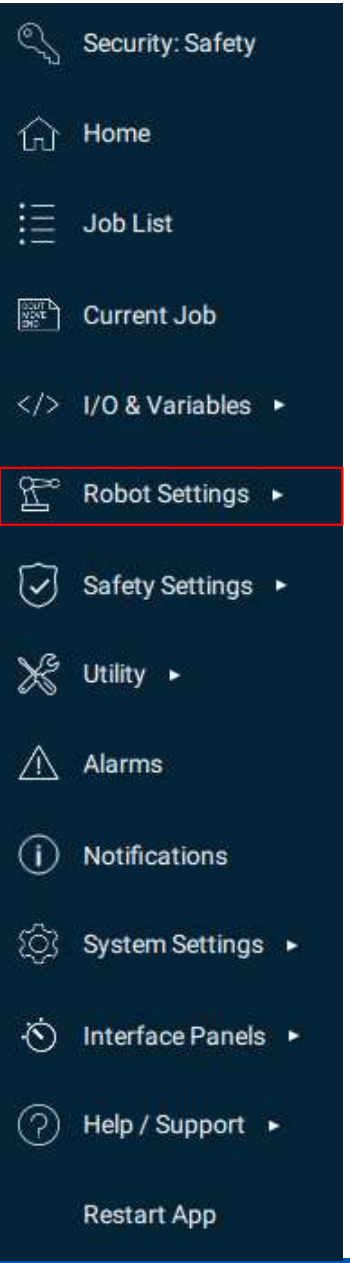


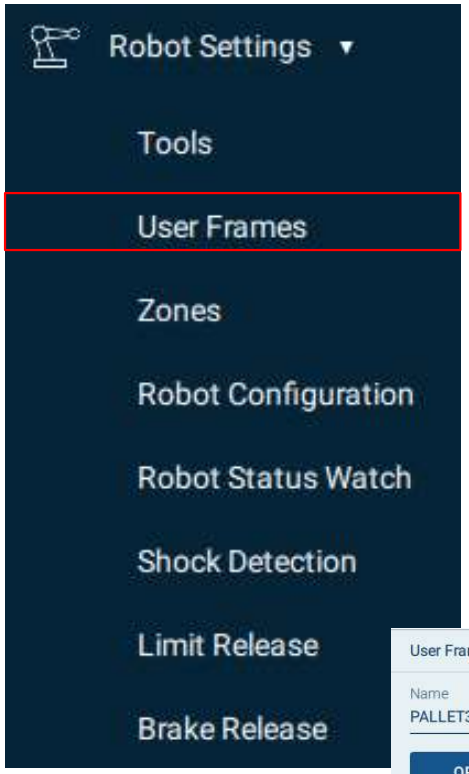
CHOOSE RECORD

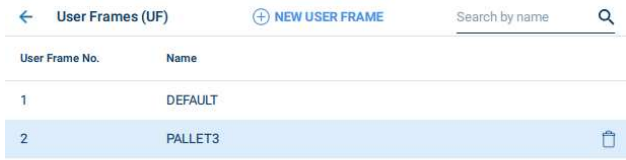


GO STEP BY STEP TO ESTIMATE TOOL LOAD

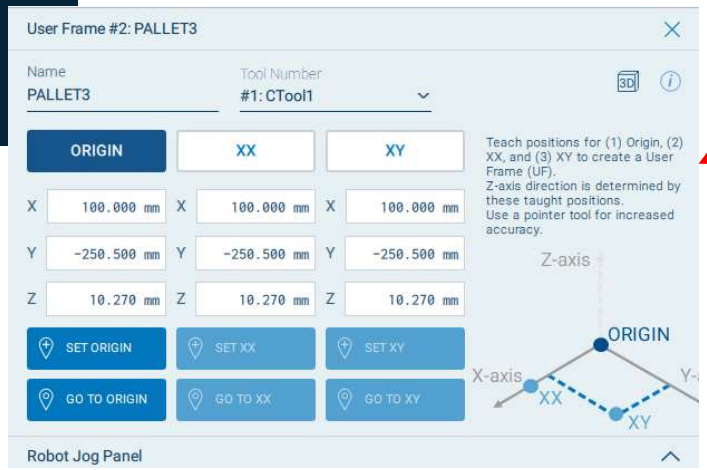
ROBOT SETTINGS -> USER FRAMES

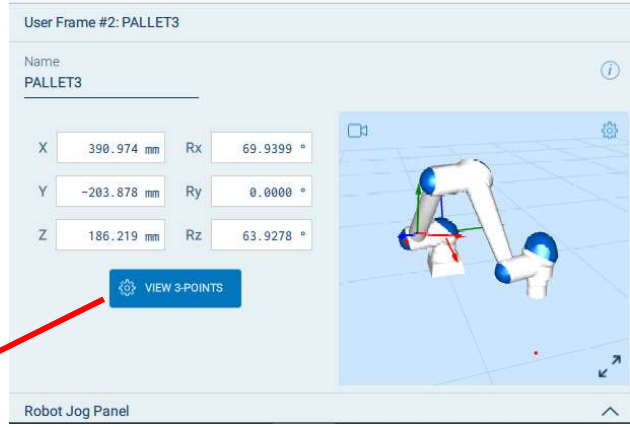




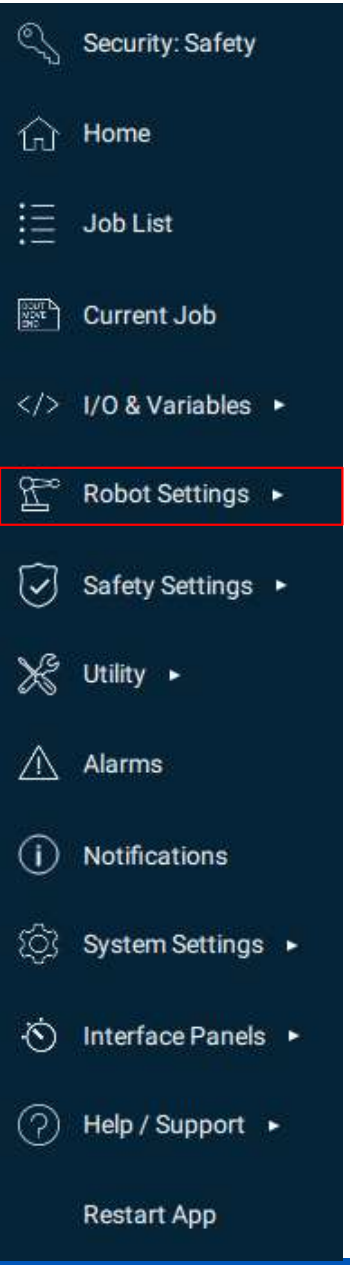


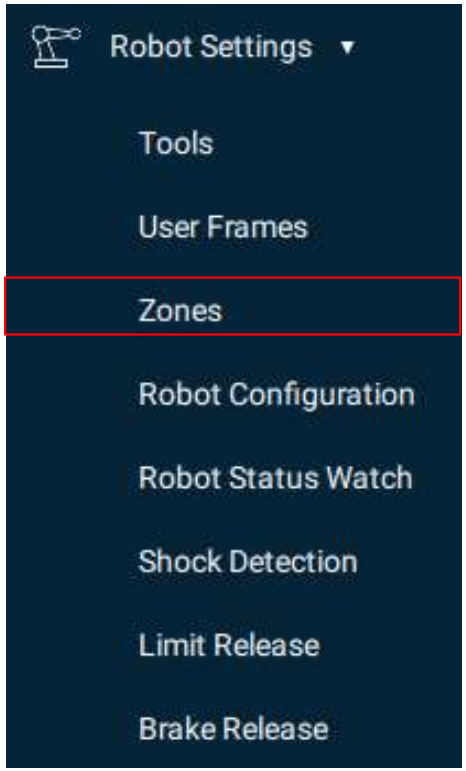
CREATE USER FRAME USING 3 POINTS

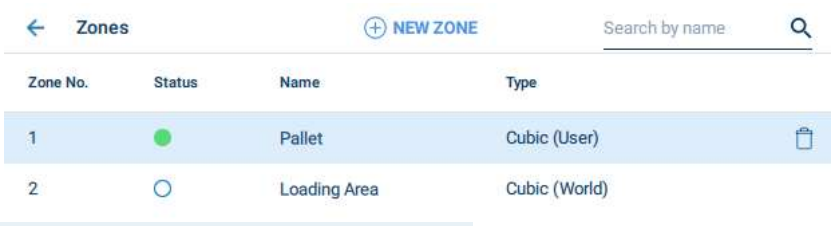


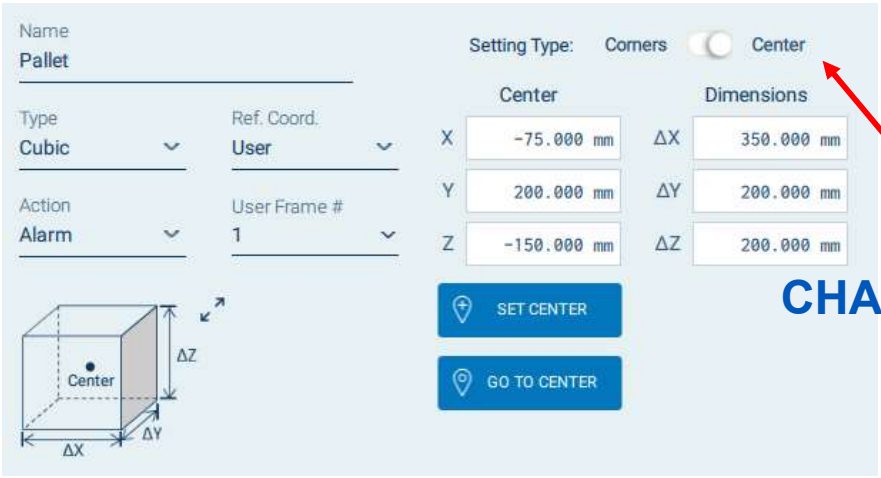


ROBOT SETTINGS -> ZONES

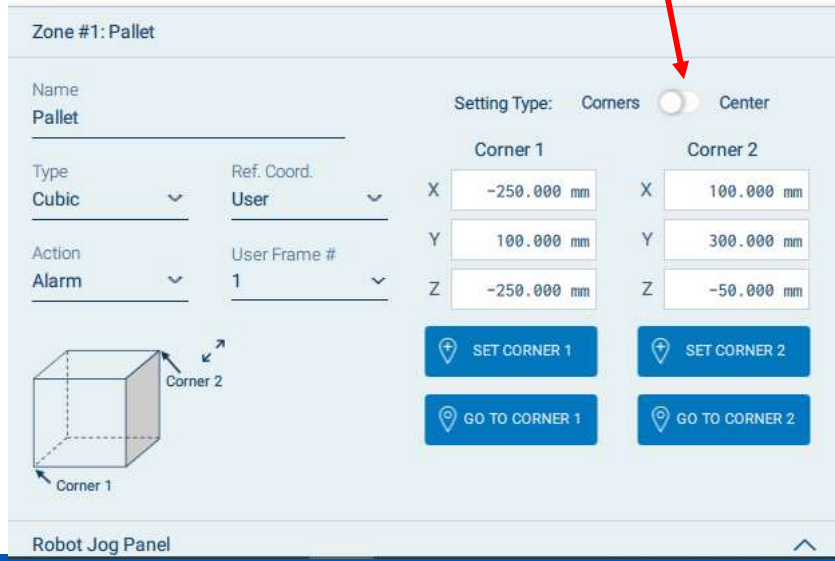




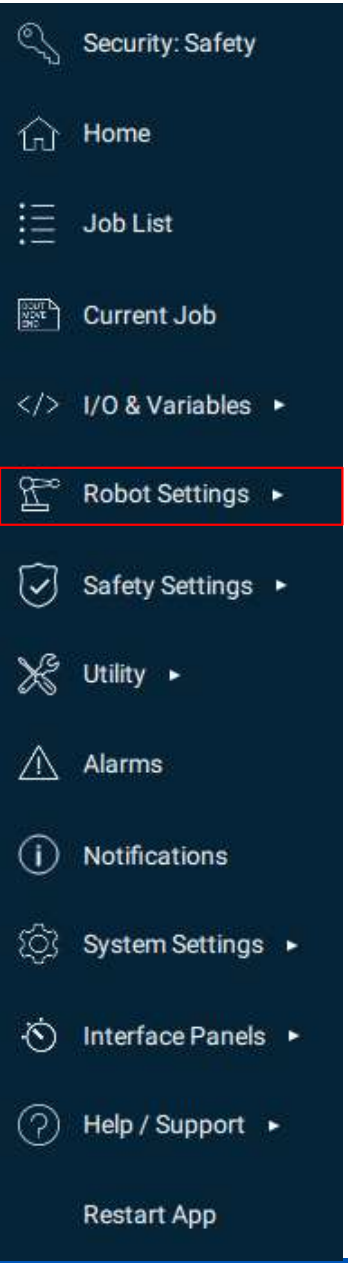


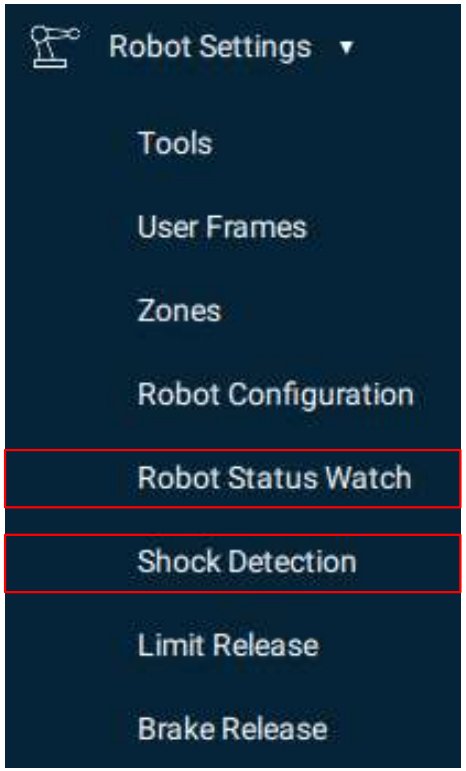


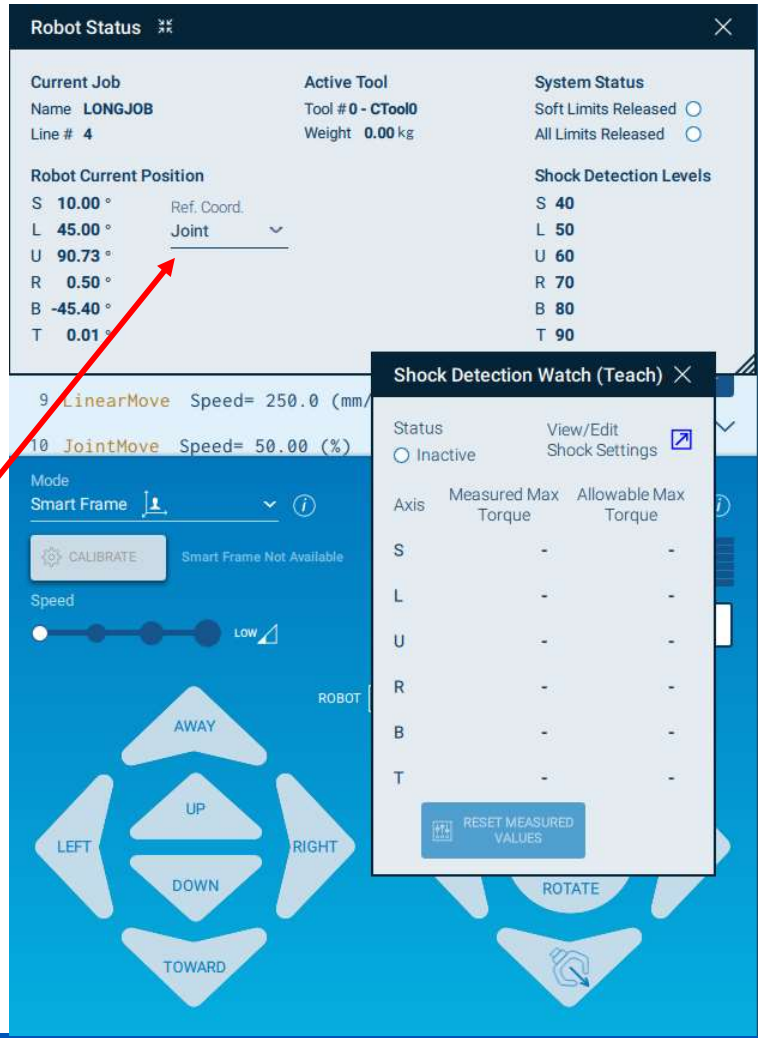
CHANGE SETTING METHOD



ROBOT SETTINGS -> ROBOT STATUS WATCH & SCHOCK DETECTION



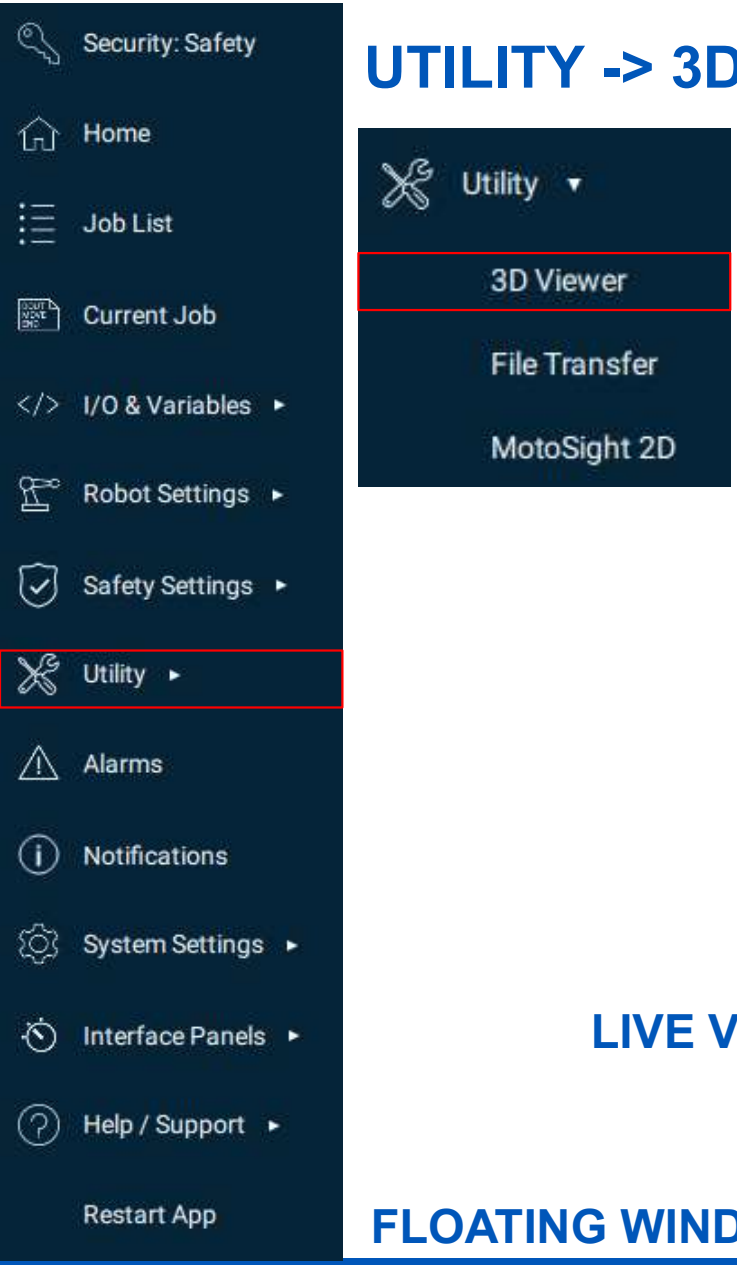


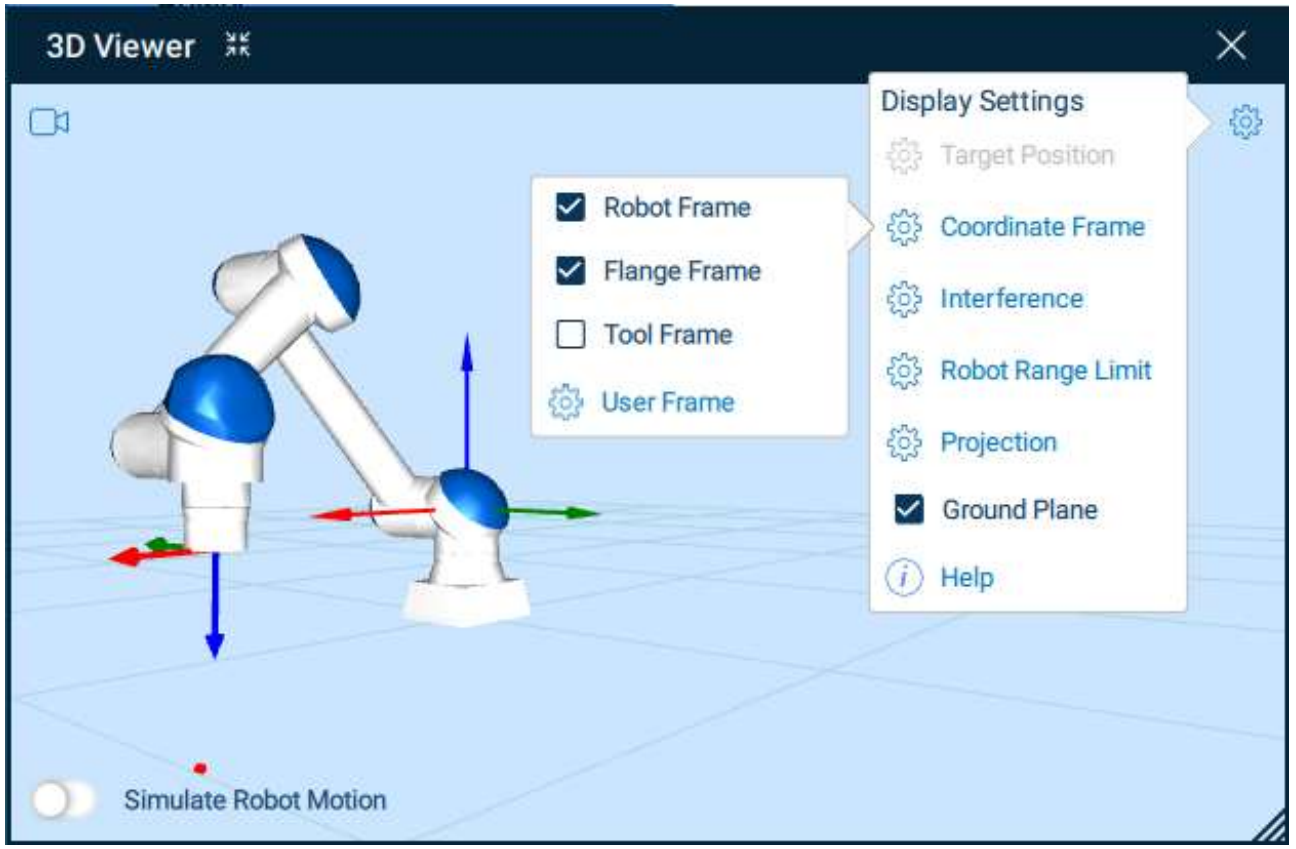


CHOOSE REFERENCE COORDINATE
JOINT / WORLD / USER / TOOL

FLOATING WINDOWS

UTILITY -> 3D VIEWER

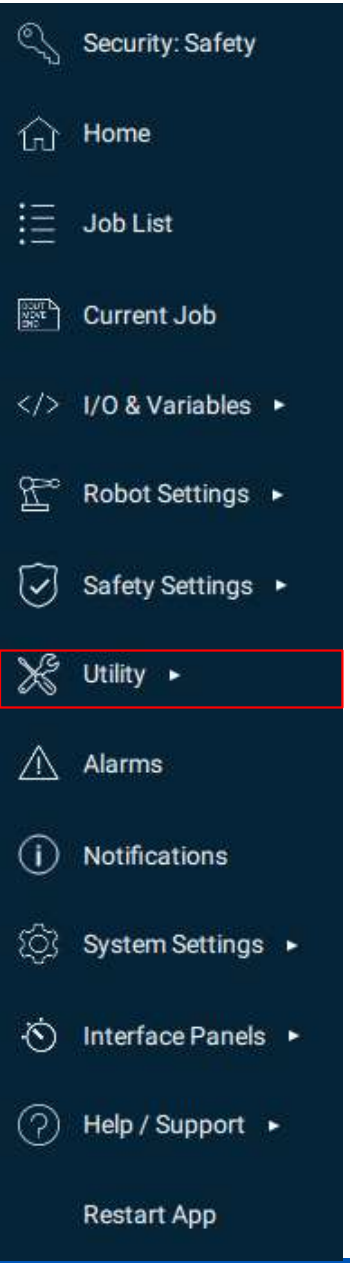


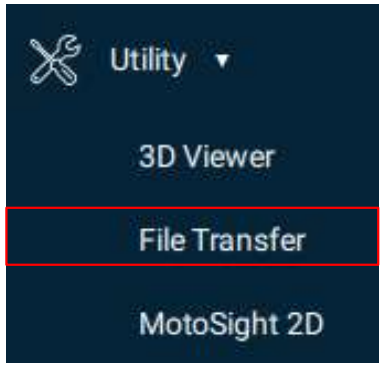


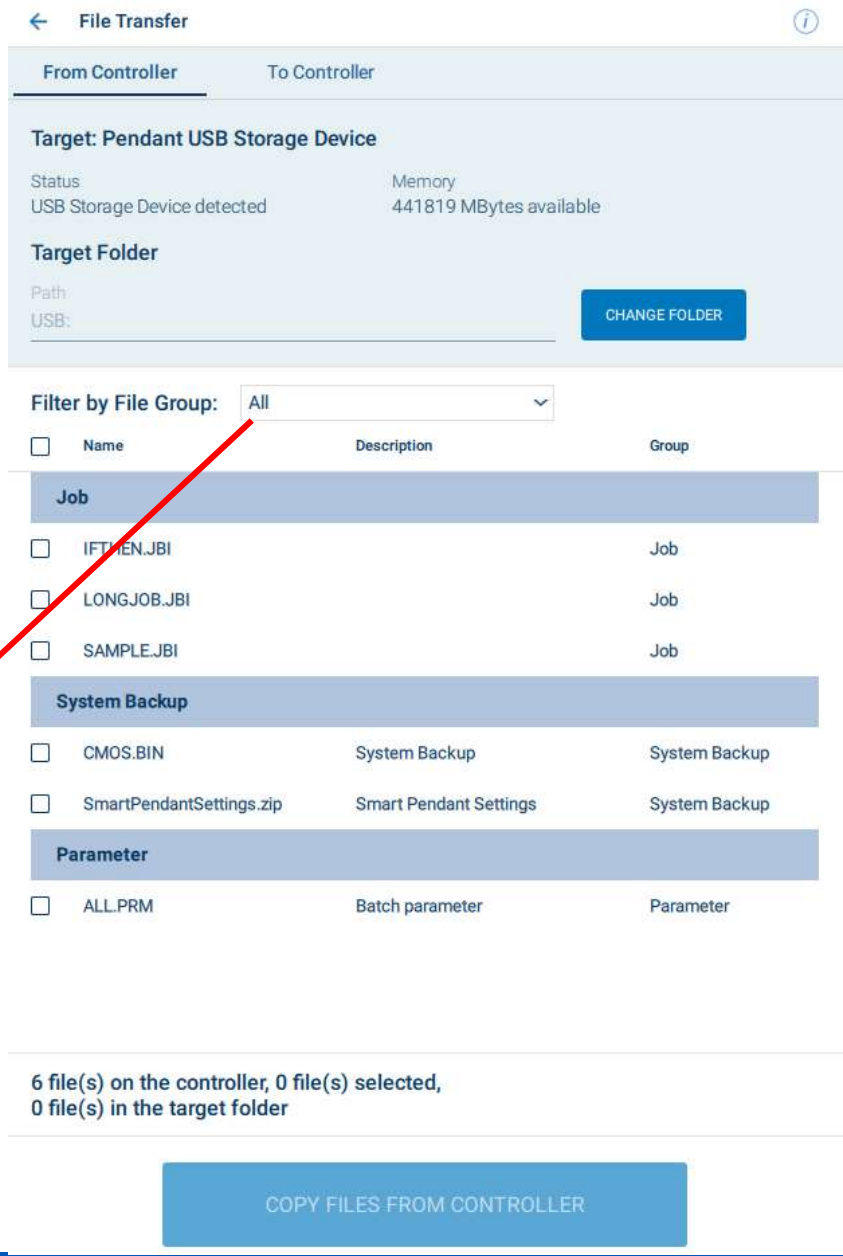
LIVE VISUALISATION & SIMULATION ROBOT MOVEMENT

FLOATING WINDOW

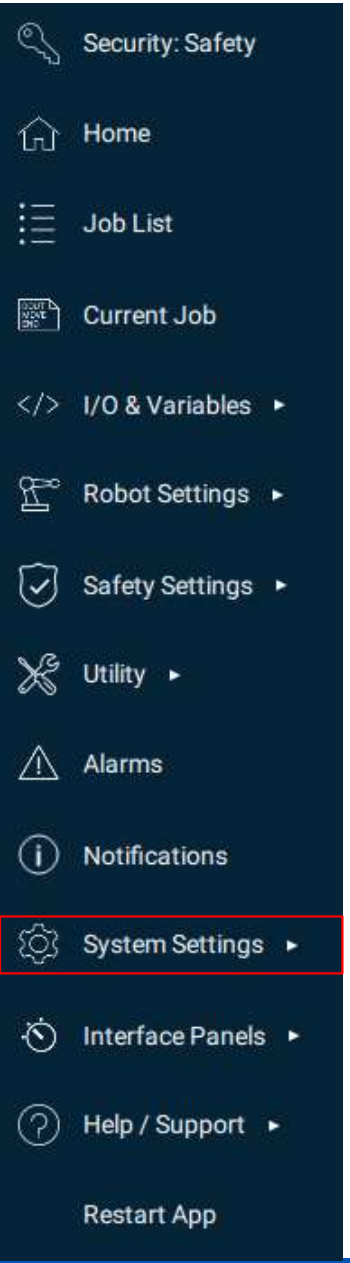
UTILITY -> FILE TRANSFER

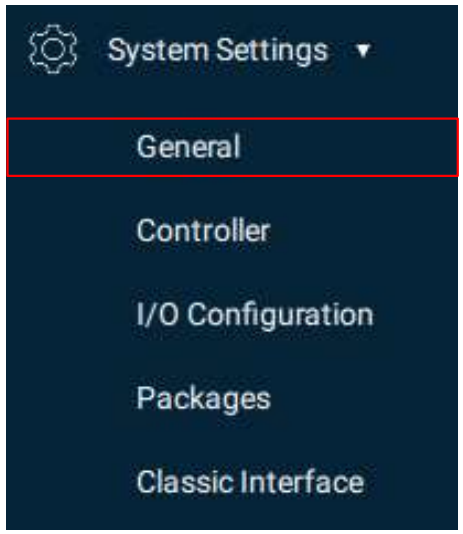


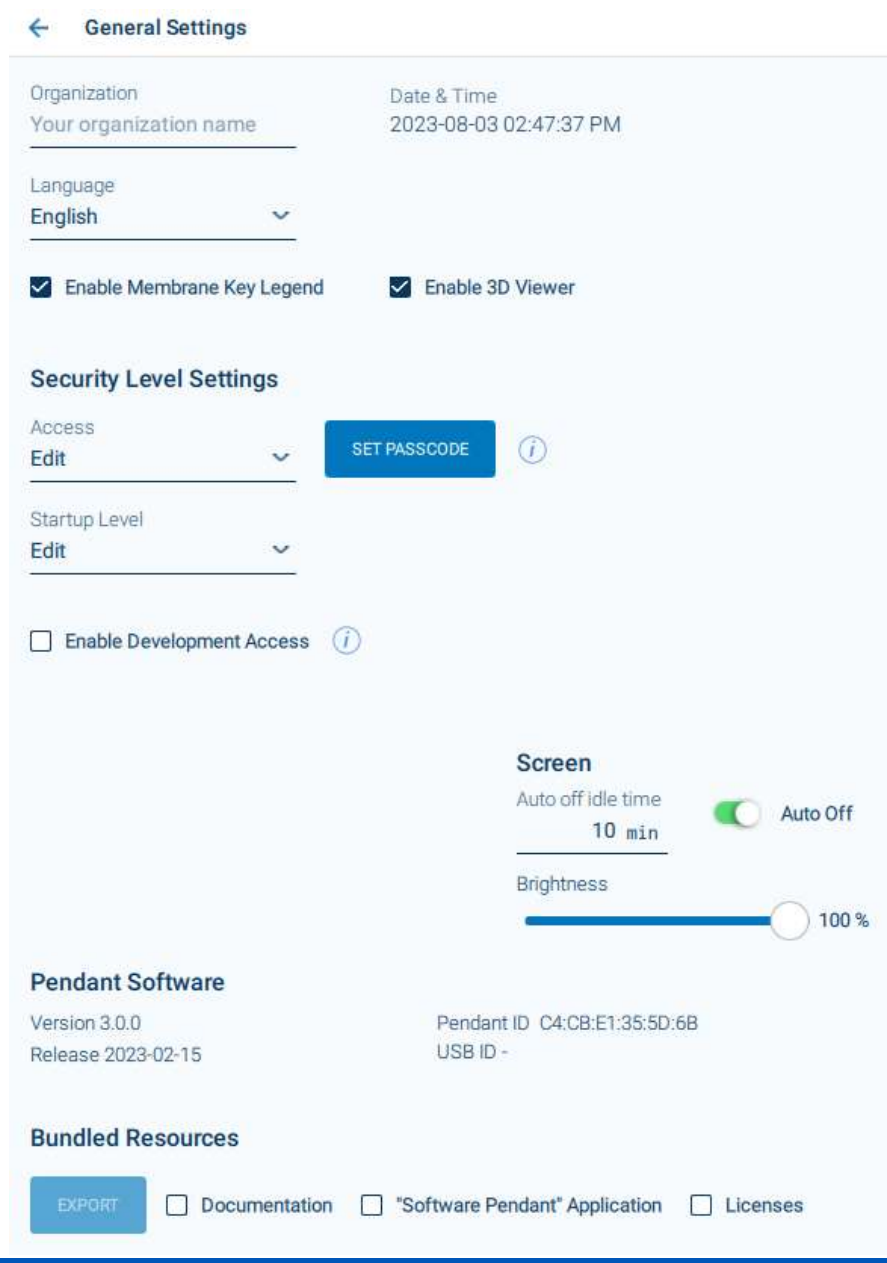




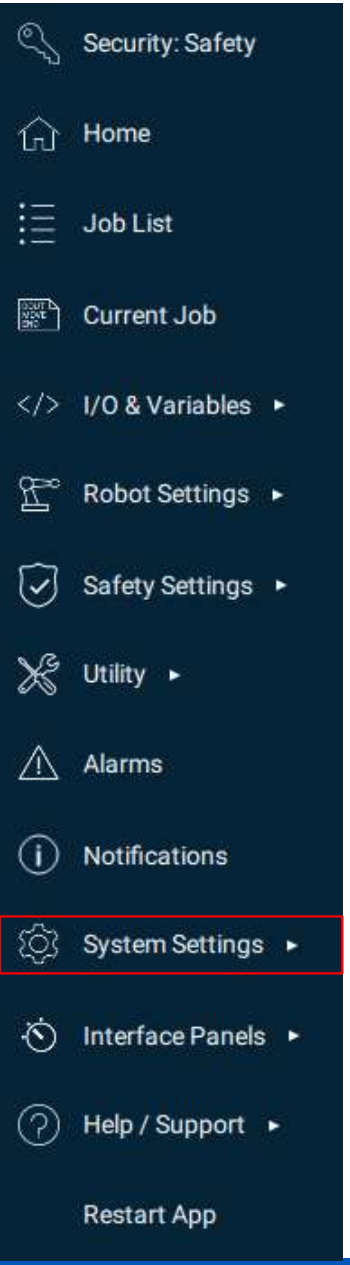
SYSTEM SETTINGS

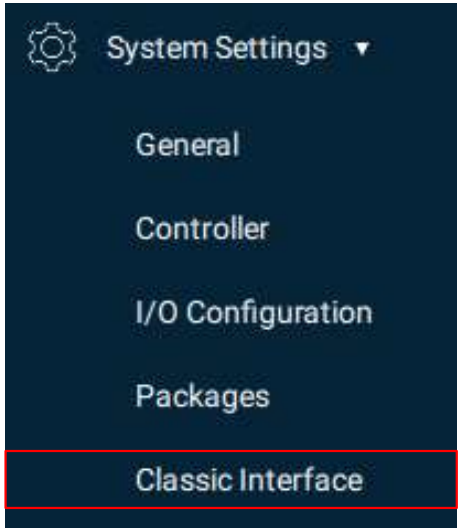






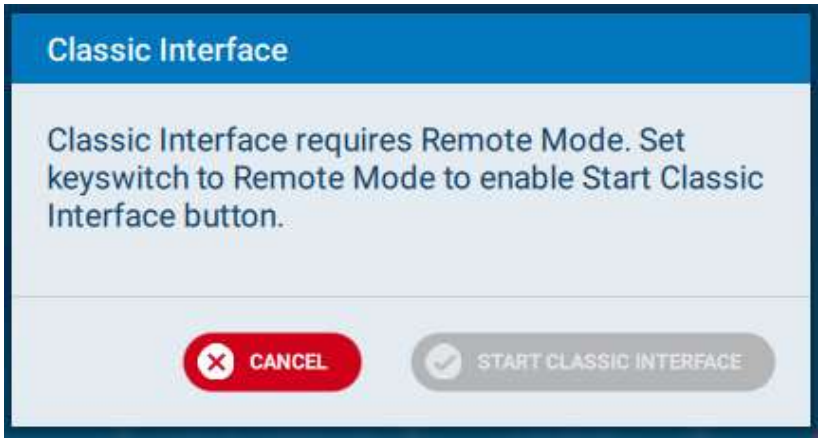
SYSTEM SETTINGS



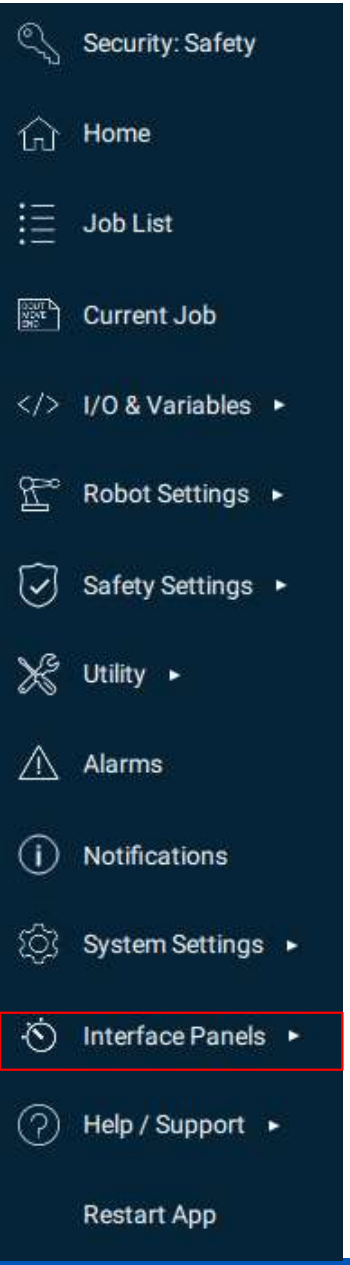


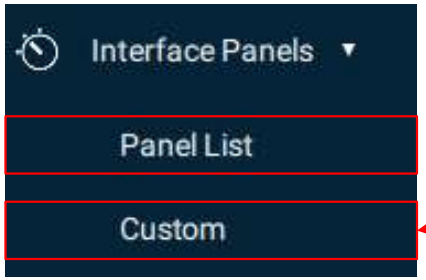
GO TO
CLASSIC INTERFACE
(TEACHPENDANT)

SET KEYSWITCH
TO REMOTE MODE

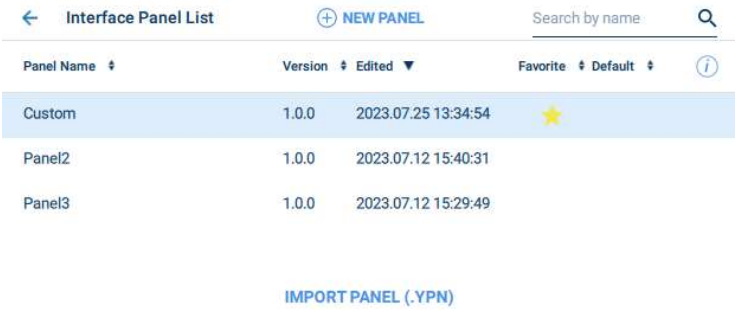


INTERFACE PANELS -> PANEL LIST + SHORTCUT (CUSTOM)



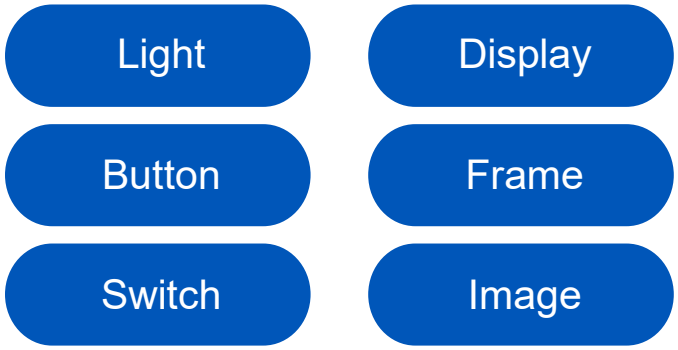


ADD SHORTCUT IN MENU

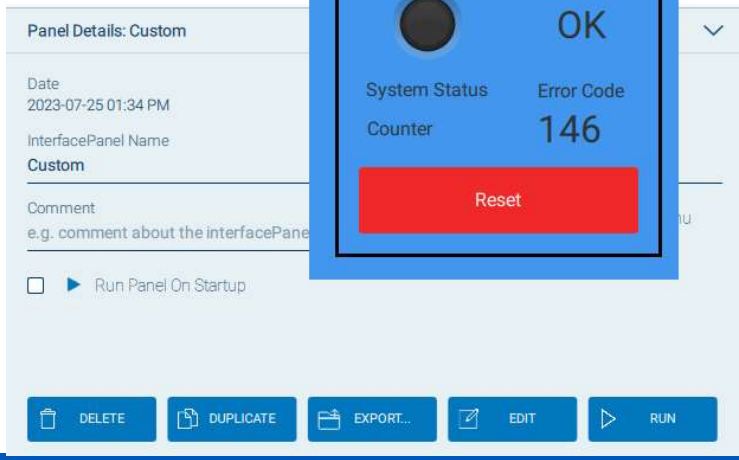


ACCESS LEVELS

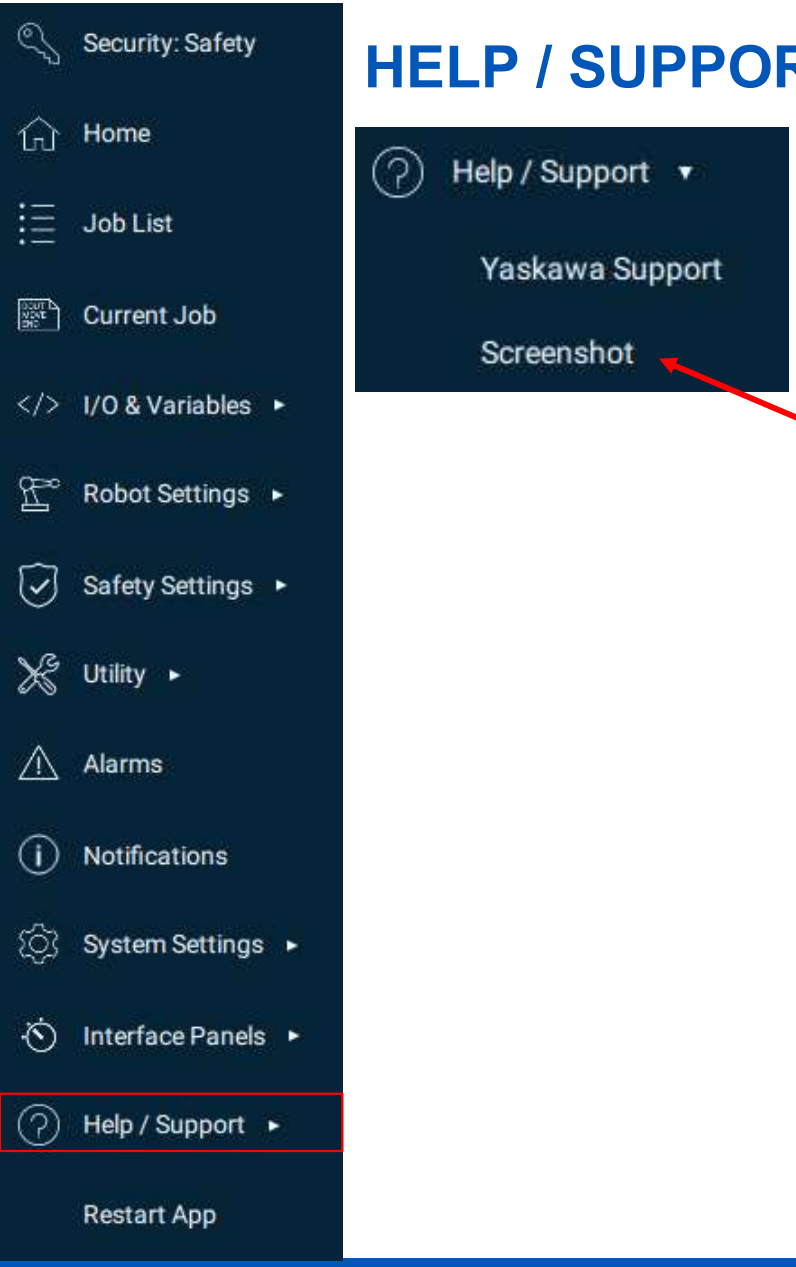
3 SIZES OF PANELS
- QUATER
- HALF
- FULL SCREEN



AVAILABLE CONTROLS



HELP / SUPPORT



SCREENSHOTS AUTOMATICALLY SAVED ON USB

PROGRAM

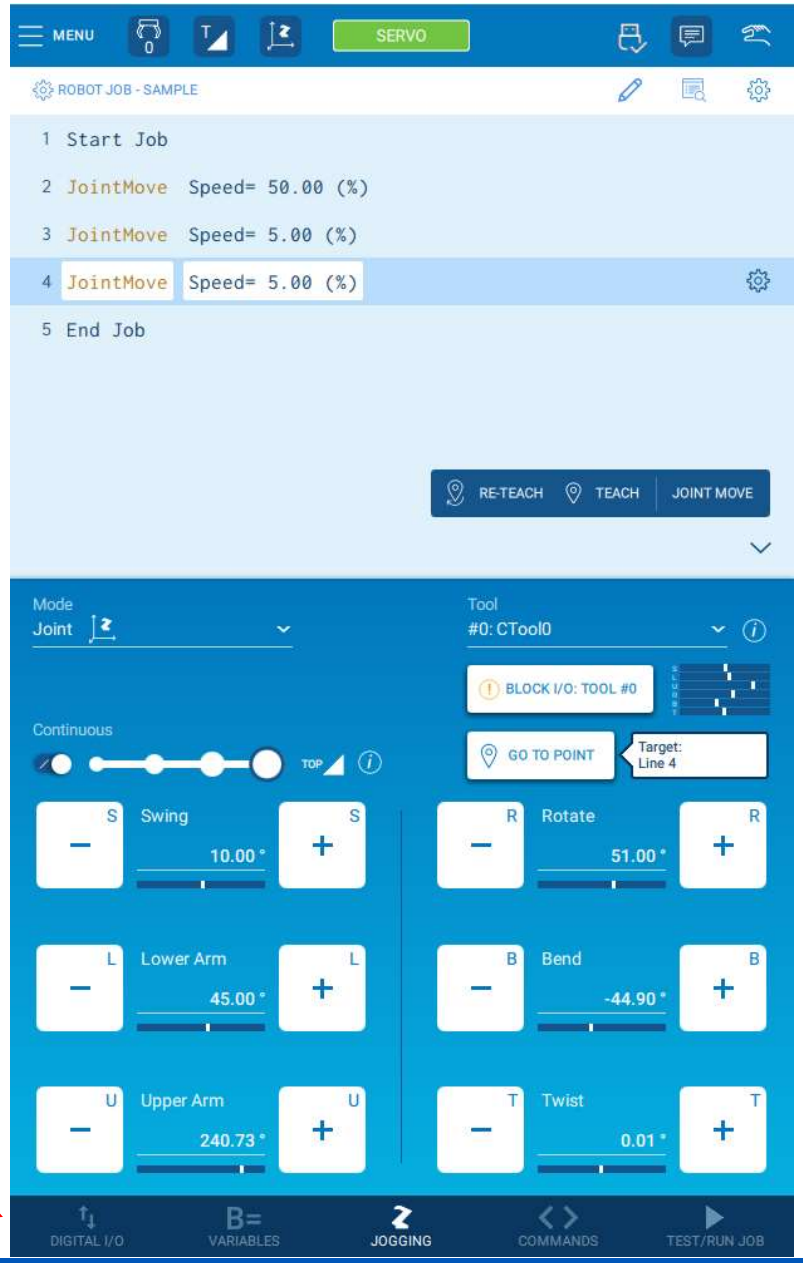
JOB CONTENTS VIEW

CONTAINS THE CONTENTS OF THE CURRENT JOB

BASIC JOB ACTIONS SUCH AS TEACHING POSITIONS, COPYING/PASTING INSTRUCTIONS AND EDITING INSTRUCTION PARAMETERS CAN BE PEROFORMED

NAVIGATION BAR

USE THIS TO CHANGE THE CONTENT OF THE PROGRAMMING PANEL



STATUS BAR

VIEW STATUS AND ACCESS COMMON ACTIONS SUCH AS {MENU} AND {SERVO}

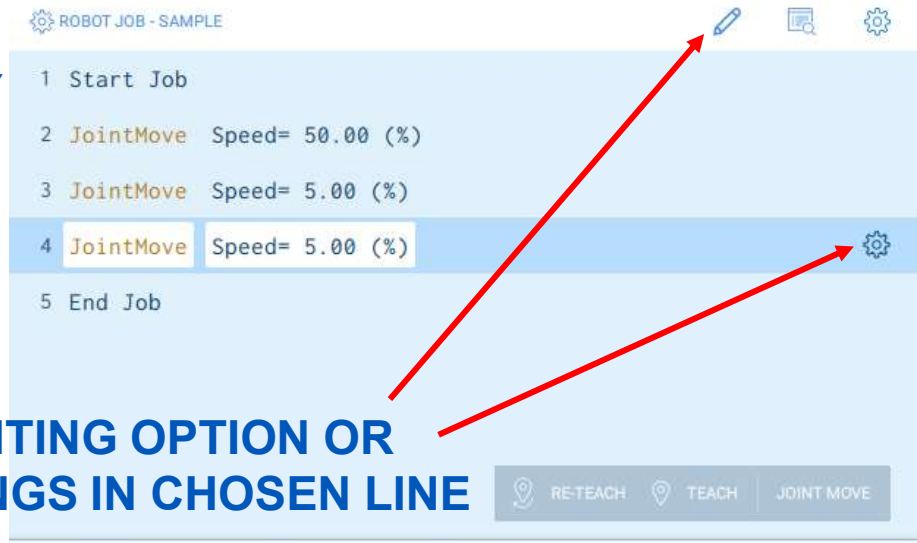
PROGRAMMING PANEL

CONTENTS WILL CHANGE BASED ON NAVIGATION BAR

FOR EXAMPLE, THE ROBOT JOG PANEL IS SHOWN IN FIGURE "JOB LAYOUT"

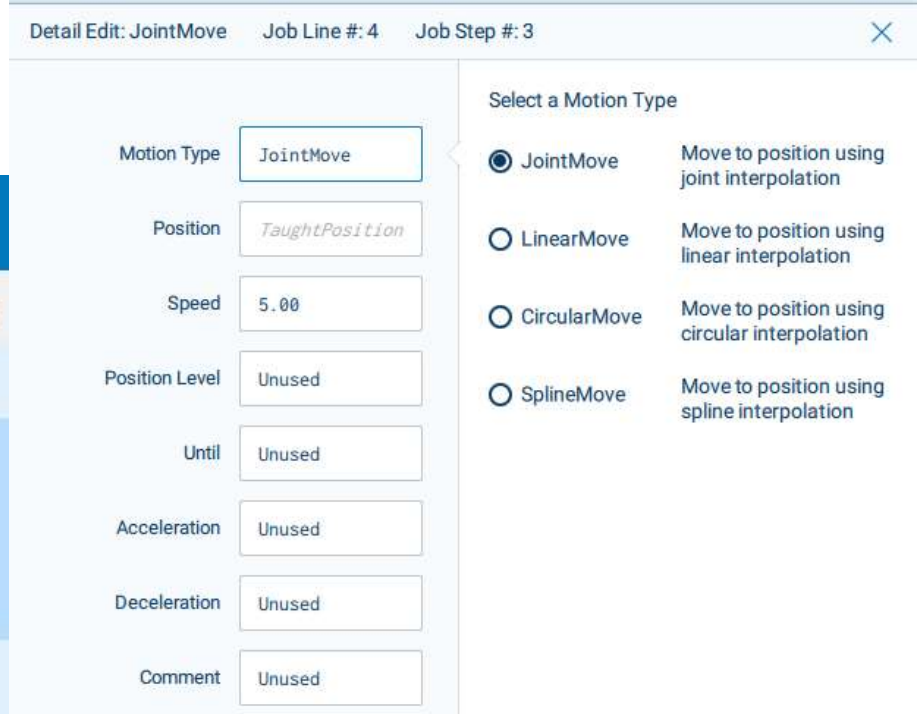
EDIT LINES

CHANGE DISPLAY TYPE



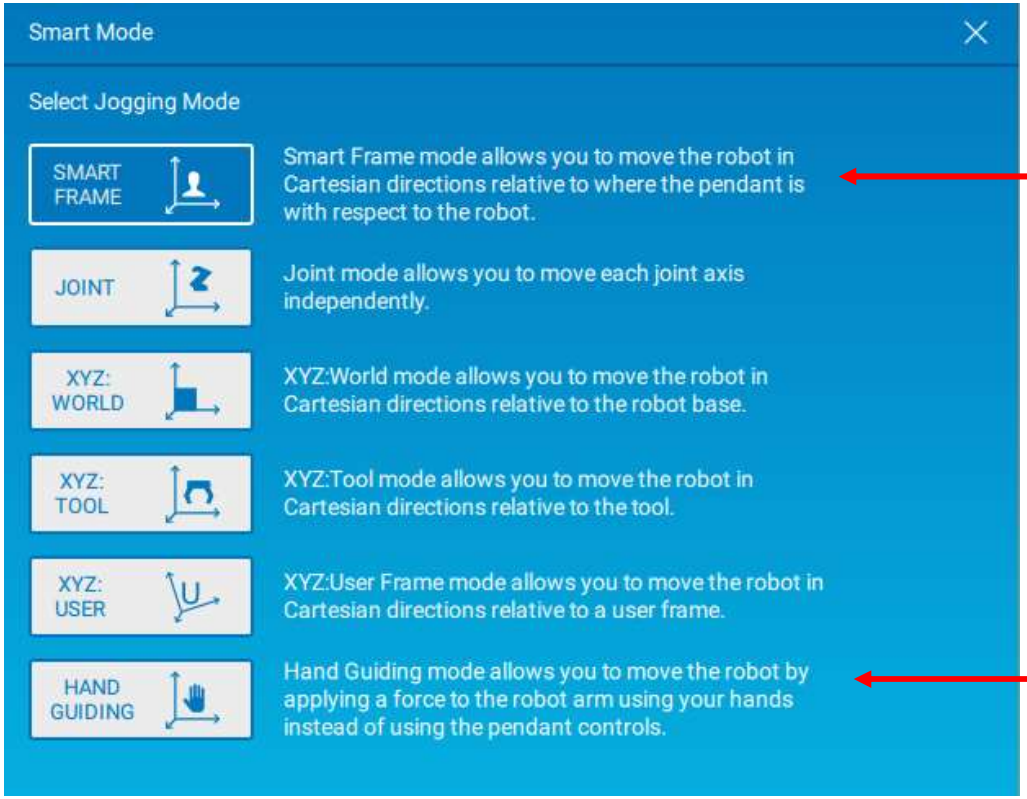
EXPAND EDITING OPTION OR SELECT SETTINGS IN CHOSEN LINE

SELECT MULTIPLE LINES AND EDIT THEM IN ONE TIME



ROBOT MOVEMENT - OPTIONS

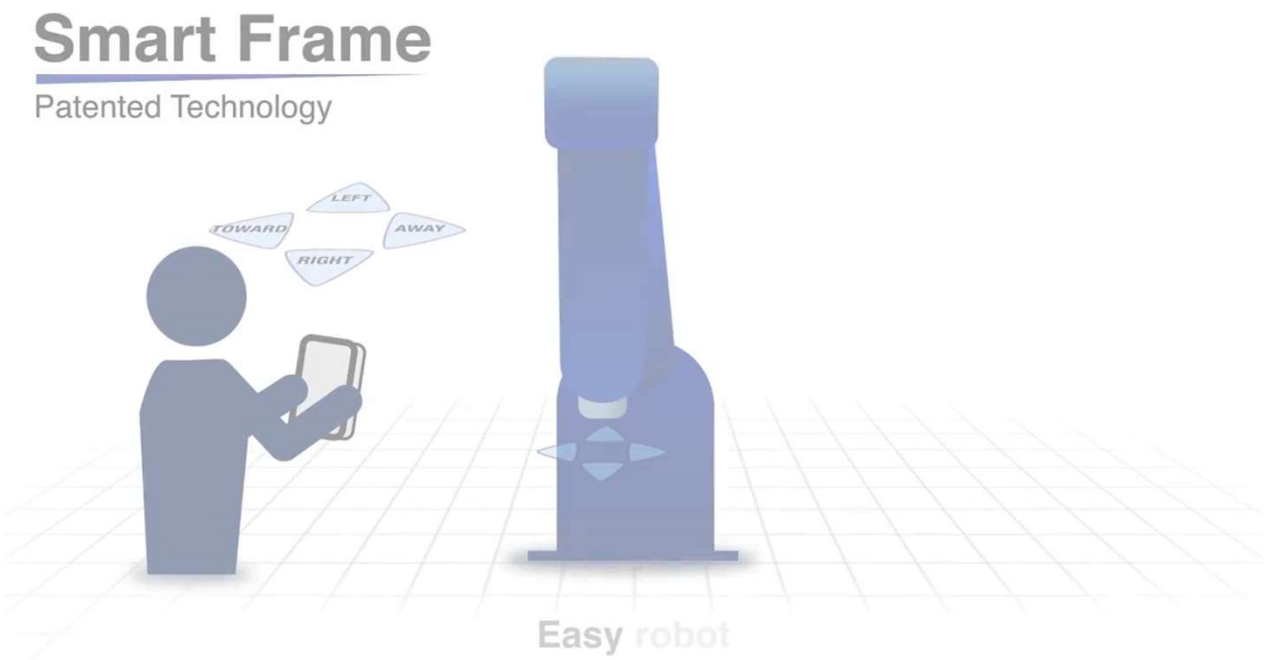
STANDARD OPTIONS



INTUITIVE PROGRAMMING

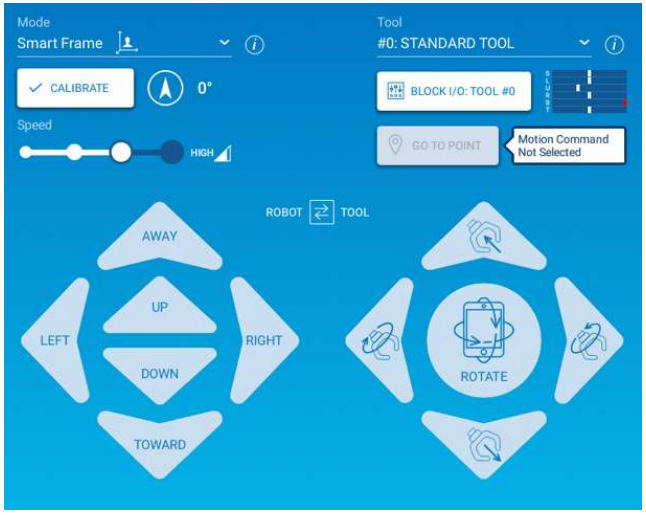
ONLY FOR COBOTS

ROBOT MOVEMENT – SMART FRAME



Smart Frame

The patented technology of the "Smart Frame" determines the user's orientation relative to the robot. This eliminates the use of conventional coordinates (X, Y, Z) frames. The intuitive robot jogging by tilting the smart pendant makes it also easy to use.

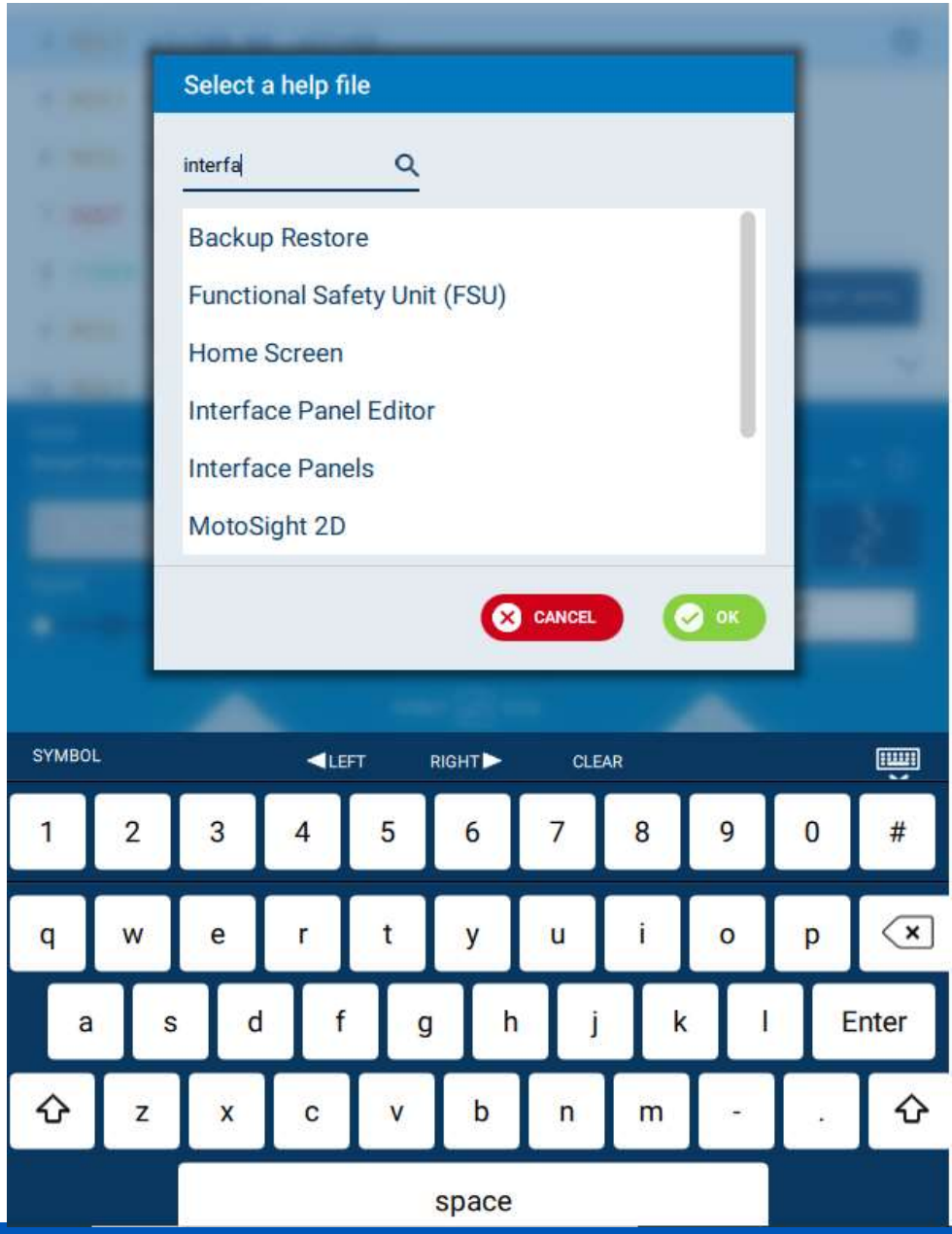


INFORMATION

BUILT-IN HELP INFORMATION TO FURTHER DESCRIBE THE INTERFACES

ACCESSED BY PRESSING THE ICON THAT SHOWS UP ON MANY PAGES

START SCREEN

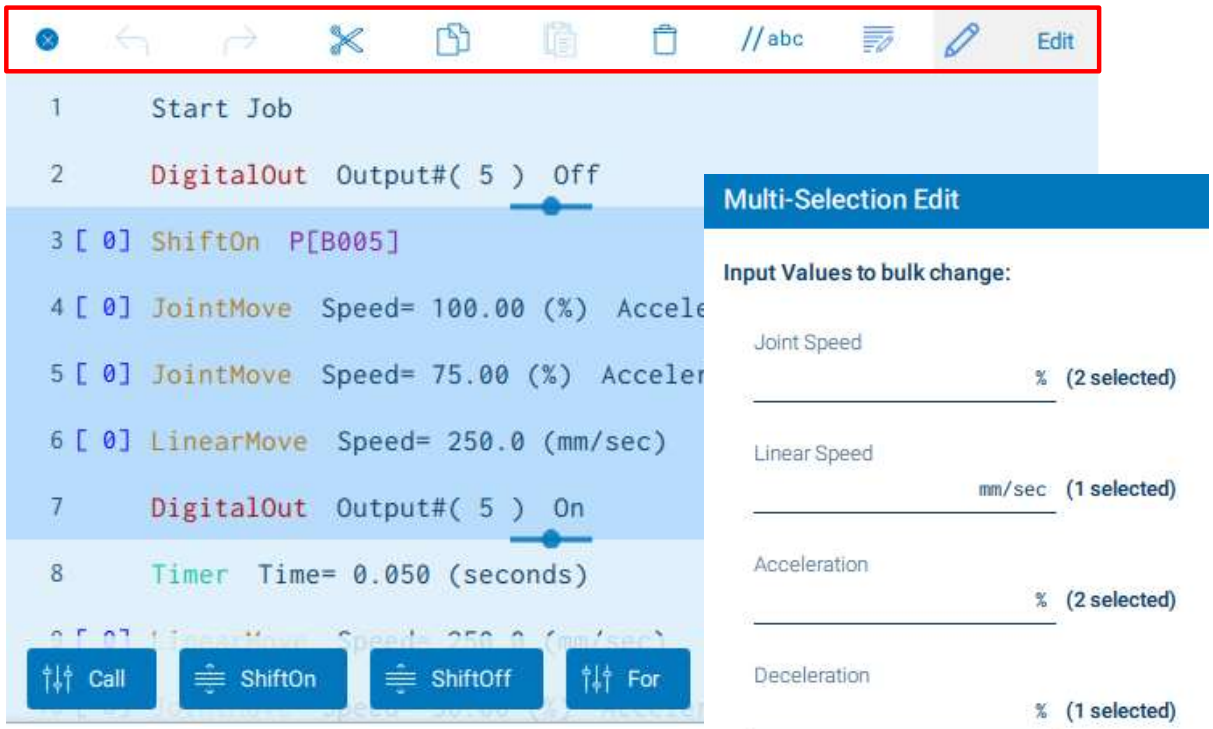


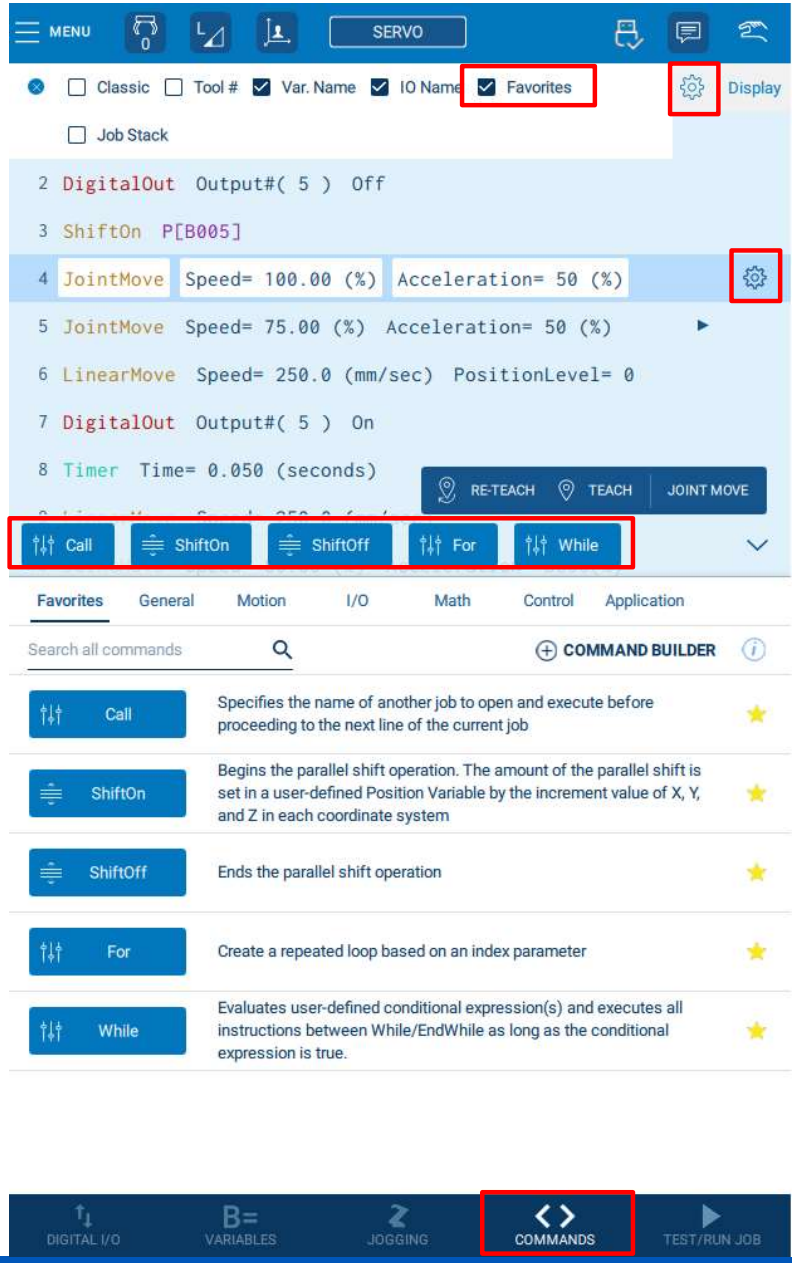
YASKAWA

SMART PENDANT INSTRUKCJE

GDZIE NALEŻY SZUKAĆ INSTRUKCJI?

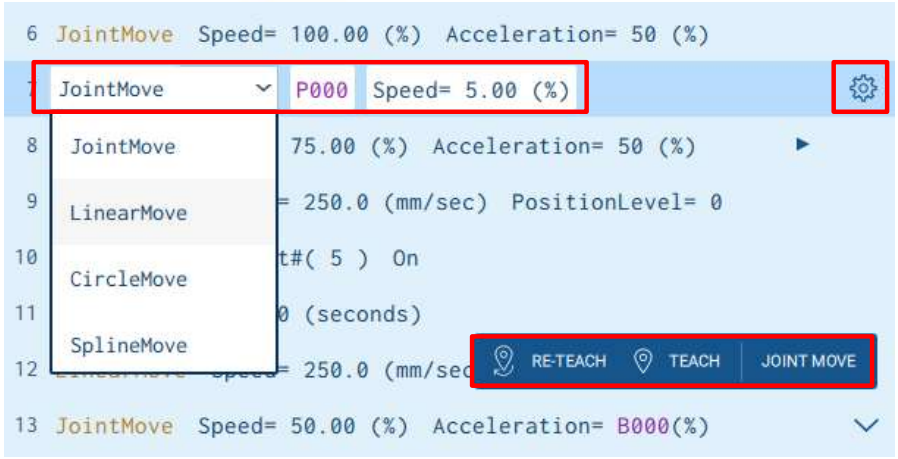
W JAKI SPOSÓB MOŻNA EDYTOWAĆ INSTRUKCJE?

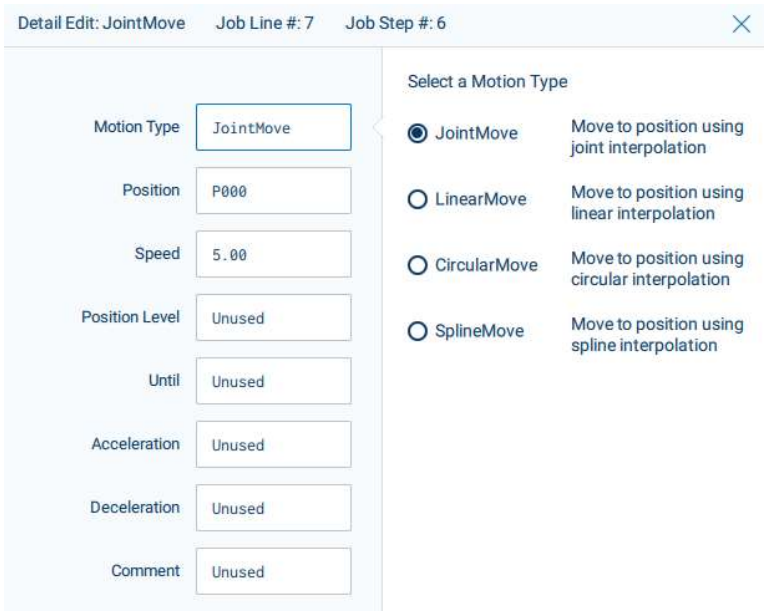


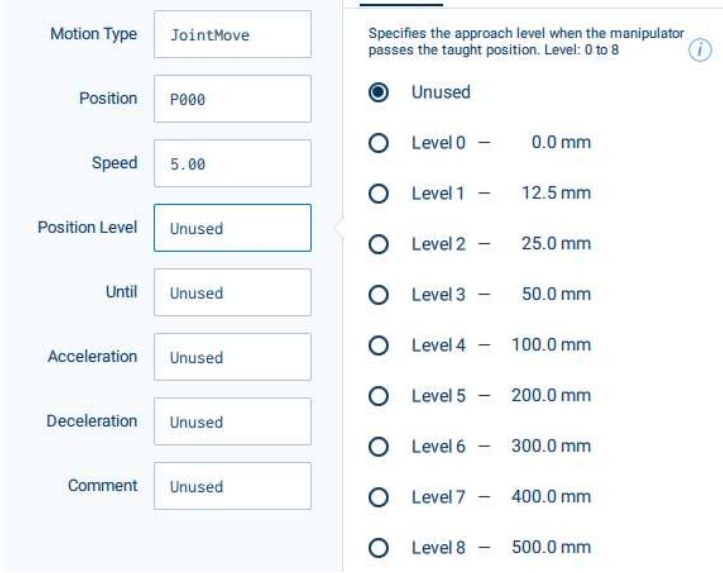


PODSTAWOWE INSTRUKCJE RUCHU

JointMove	Moves to a user-defined **Position Variable** by joint interpolation. **Different from {TEACH} above that uses robot's CURRENT position**
LinearMove	Moves to a user-defined **Position Variable** by linear interpolation. **Different from {TEACH} above that uses robot's CURRENT position**
CircleMove	Moves to a user-defined **Position Variable** by circular interpolation. **Different from {TEACH} above that uses robot's CURRENT position**
SplineMove	Moves to a user-defined **Position Variable** by spline interpolation. **Different from {TEACH} above that uses robot's CURRENT position**





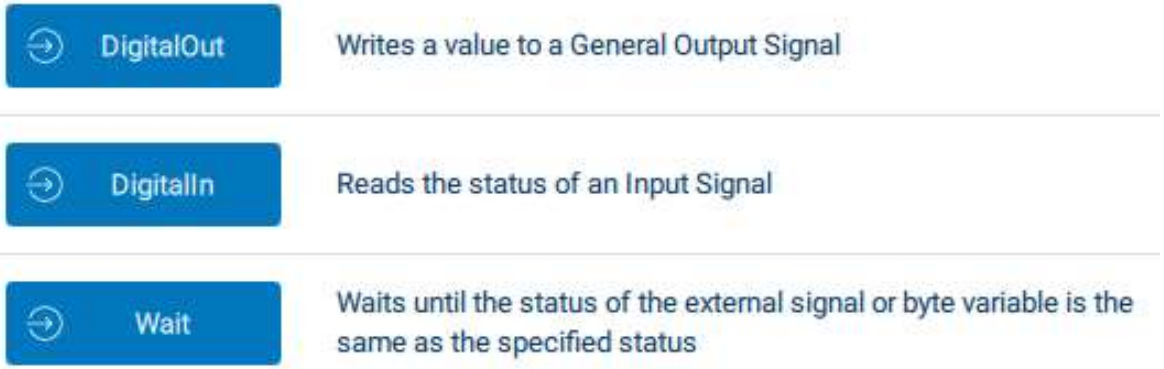


DZIAŁANIA NA ZMIENNYCH

Increment	Adds 1 to the content of the specified variable
Decrement	Subtracts 1 from a specified variable
Add	Adds Data 1 and Data 2, and stores the result in Data 1 Data1 = Data1 + Data2
Subtract	Subtracts Data 2 from Data 1, and stores the result in Data 1 Data1 = Data1 - Data2
Multiply	Multiplies Data 1 by Data 2, and stores the result in Data 1 Data1 = Data1 * Data2
Divide	Divides Data 1 by Data 2, and stores the result in Data 1 Data1 = Data1 / Data2
SetElement	Sets Data 2 in the element of position type variable of Data 1
GetElement	Stores the element of position type variable of Data 2 in Data 1

Set	Sets Data1 to the value of Data2 Data1 = Data2
Clear	In Data 1, the variable content from the specified number on, is cleared to 0 only by the amount specified in Data 2
And	Carries out logical multiplication of Data 1 and Data 2, and stores the result in Data 1
Or	Carries out the logical sum of Data 1 and Data 2, and stores the result in Data 1
Not	Carries out the logical negation of Data 2, and stores the result in Data 1
Xor	Carries out the logical exclusive OR of Data 1 and Data 2, and stores the result in Data 1

SYGNAŁY



POZOSTAŁE

For	Create a repeated loop based on an index parameter
While	Evaluates user-defined conditional expression(s) and executes all instructions between While/EndWhile as long as the conditional expression is true.
IfThen	Evaluates user-defined conditional expression(s) to determine the proper execution of the following instruction(s)
ElseIf	Adds an additional condition to the IfThen/EndIf structure. Can only be added between IfThen and EndIf.
Else	Adds a final condition to the IfThen/EndIf structure to execute if all other conditions fail. Can only be added between IfThen and EndIf.
Timer	Stops a job for the user-defined time
Switch	Evaluate the specified variable and then perform corresponding Case instruction equal to its value.
Case	Adds a branch to a Switch instruction. This branch will be executed if its value is equal to the variable in the Switch instruction.

POZOSTAŁE

Call	Specifies the name of another job to open and execute before proceeding to the next line of the current job
Label	User-specified Label for a Jump
Jump	Jumps to a user-specified Label
ShiftOn	Begins the parallel shift operation. The amount of the parallel shift is set in a user-defined Position Variable by the increment value of X, Y, and Z in each coordinate system
ShiftOff	Ends the parallel shift operation

```
For  I000  =  0  to  4
   ShiftOn  P000
   JointMove  Speed= 5.00 (%)
   JointMove  Speed= 5.00 (%)
   ShiftOff
   Add  P000  P001
Next  I000
```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