Experience Your **SMART FACTORY**

Hi-LINK Mode1 Specification

Hanwha

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Hi-LINK V1.0.3

1. General Information
2. Function Description
3. Trouble Shooting

Hanwha

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CHAPTER. 1
General Information

Hanwha

1. General Information – 1) Introduction

- Purpose

  - It can be used for data acquisition of Hanwha CNC equipment from external solutions such as MES.

- Scope of support

  - Among Hanwha machine tools, the following CNC controllers are supported.
  : 0i-D, 0i-F, 31i, 32i-B

  - The following CNC controllers can be used, but support is not guaranteed.
  : 18i-B

- License Policy

  - One serial number is provided for the license, and only one PC can be registered.

  - For initialization of an already activated license, please contact us at the email address below. Your request may be rejected according to our service policy.
  : cjso89@hanwha.com

  - The following information is required for license issuance.
  : SI Company Name
  : Customer company name and number of connected facilities
  The above information is stored in the database to provide license reissuance and initialization services, and is used as customer identification information.

1. General Information – 2) Data Access Module

- Permitted data by access level

  - Monitoring data and remote control activation functions are classified according to the customer's ID level.

Monitoring Grade	Accessible Data
Module1	Machine Status
	Production quantity
	Error Information
	Activated Program Information
Module2	Tool Life Data
	Tool Offset Information
Module3	Motor Temperature
	Program List
	Program Detail Information
Module4	NC OP(Operating Panel) Status

Remote control Grade	Accessible Data
Module1	-
Module2	Update Tool Life
	Update Tool Offset
Module3	Create Program
	Update Program
	Delete Program
	Change Activation Program
Module4	OP Remote Control

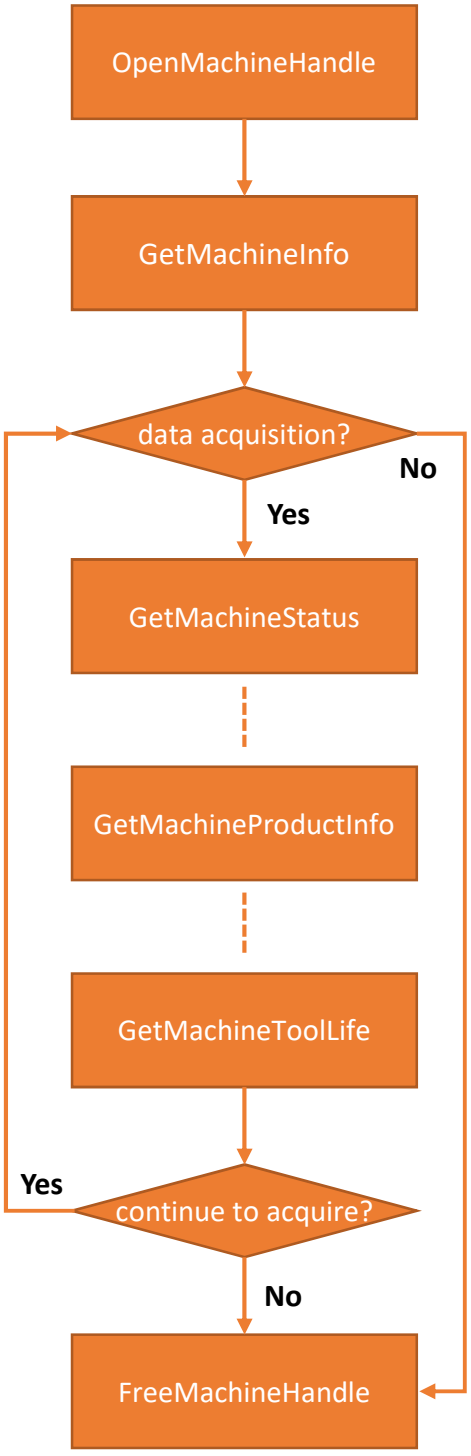
1. General Information – 3) Necessary File

- Necessary DLL List

1. Necessary DLL
- Hi-Link.dll
- websocket-sharp.dll

2. DLL Path : 64bit - C:\Windows\SysWOW64
- Fwlib32.dll
- Fwlibe1.dll

1. General Information – 4) Quick Start Diagram



: Open machine communication

: Check the controller and tool type

: Check current status of machine

: Get production and target quantity

: Get tool life list

: Disconnect machine communication

1. General Information – 5) Document History

Version	Date of revision	Revision History	Writer
V0.0.1	2021-10-19	First written (Trial Version)	So ChangJu
V0.1.0	2022-03-11	Field-Test Version	So ChangJu
V1.0.0	2022-05-18	Add Necessary DLL	So ChangJu
V1.0.1	2022-05-30	Comment of error code	So ChangJu
V1.0.2	2022-07-01	Trouble Shooting 1), 2)	So ChangJu
V1.0.3	2023-01-27	Del Unnecessary DLL	Shim Hyeong woo

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CHAPTER. 2
Function Description

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2. Function Description – 1) OpenMachineHandle

Function Name

OpenMachineHandle

Declaration

static short OpenMachineHandle(string serialNum, string ip, ushort port, int timeout, out ushort flibHndl, out bool enable)

Description

Connect TCP/IP communication with machine

Check serial key when attempting machine communication

When using Hi-LINK for the first time, it is possible to activate the license only when the Internet is connected

Arguments

string	serialNum	Hi-LINK serial key
string	ip	IP Address
ushort	port	Port Number
int	timeout	Communication timeout
out ushort	flibHndl	Comm. Handler number
out bool	enable	Whether the license is activated

Return

-32	Exceeded number of equipment connections – Type2
-31	Exceeded number of equipment connections – Type1
-24	Unknown error checking serial number. Contact your Hi-LINK representative
-23	It is different the PC with the serial number activated and the current PC. Check the serial number for the PC or re-enable it
-22	Could not log in to the license activation server. Please contact Hi-LINK manager.
-21	You cannot access the online activation server or you do not have internet. Check your internet connection.
-16	CNC communication error. Check the facility power, communication cable, IP and port number.
-15	There is no DLL for the CNC type. Check whether the CNC type is supported.
0	Normal operation
21	You used the wrong serial number. Please enter the serial number correctly.
22	Serial number registered in another PC. Serial number already activated. Get a new license key.

2. Function Description – 2) FreeMachineHandle

Function Name

FreeMachineHandle

Declaration

static short FreeMachineHandle(ushort flibHndl)

Description

Disconnect TCP/IP communication with machine

Arguments

ushort	flibHndl	Machine Handler Number

Return

-99	Activate the license.
0	Normal operation

2. Function Description – 3) GetMachineInfo

Function Name

GetMachineInfo

Declaration

static short GetMachineInfo(ushort flibHndl, ref MachineInfo machineInfo)

Description

Get the controller type and tool type information.

Arguments

ushort	flibHndl	Machine Handler Number
ref MachineInfo	machineInfo	Controller and tool type

Return

-99	Activate the license.
-21	This facility is not registered. Check the facility name and controller type. And contact the manager.
-8	Invalid communication handler number used.
0	Normal operation

Struct Name

MachineInfo

Declaration

```
public struct MachineInfo
{
    public int controllerType;
    public short panelType;
    public short toolType;
    public bool compatibleMachine;
}
```

Arguments

int	controllerType	CNC controller type
short	panleType	OP Type
short	toolType	Tool Post Type
bool	compatibleMachine	Whether the machine is compatible

2. Function Description – 4) GetMachineStatus

Function Name

GetMachineStatus

Declaration

static short GetMachineStatus(ushort flibHndl, ref MachineStatusType machineStatus)

Description

Get the current state of the equipment.

Arguments

ushort	flibHndl	Machine Handler Number
ref MachineStatusType	machineStatus	Machine Status

Return

-99	Activate the license.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Enum Name

MachineStatusType

Declaration

```
enum MachineStatusType
  {
    None = -1,
    PowerOff = 0,
    Run = 1,
    Stop = 2,
    Alarm = 3
  }
```

2. Function Description – 5) GetMachineProductInfo

Function Name

GetMachineProductInfo

Declaration

static short GetMachineProductInfo(ushort flibHndl, ref MachineProductInfo machineProductInfo)

Description

Get the production quantity and target quantity of the equipment.

Arguments

ushort	flibHndl	Machine Handler Number
ref MachineProductInfo	machineProductInfo	production quantity

Return

-99	Activate the license.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Struct Name

MachineProductInfo

Declaration

```
public struct MachineProductInfo
    {
        public int currentProdCount;
        public int targetProdCount;
        public short unitFlag;
    }
```

Arguments

Int	currentProdCount	Current production count
Int	targetProdCount	Target production count
short	unitFlag	equipment dimension unit =0 : mm =1 : inch

2. Function Description – 6) GetMachineAlarmInfo

Function Name

GetMachineAlarmInfo

Declaration

static short GetMachineAlarmInfo(ushort flibHndl, ref MachineAlarmInfo machineAlarmInfo)

Description

Get the current alarm information of the equipment.

Arguments

ushort	flibHndl	Machine Handler Number
ref MachineAlarmInfo	machineAlarmList	Machine Error List

Return

-99	Activate the license.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation
99	The alarm number is not valid.

Struct Name

MachineAlarmInfo

Declaration

```
public struct MachineAlarmInfo
    {
        public short headType
        public MachineAlarm[] alarmArray
    }
```

Arguments

short	headType	Path Type
MachineAlarm[]	alarmArray	Machine Error List

Struct Name

MachineAlarm

Declaration

```
public struct MachineAlarm
    {
        public string axis;
        public int no;
        public int type;
    }
```

Arguments

string	axis	Alarm axis
int	no	Alarm number
int	type	Alarm type

2. Function Description – 7) GetMachineToolLife

Function Name

GetMachineToolLife

Declaration

static short GetMachineToolLife(ushort flibHndl, short toolType, ref MachineToolLifeInfo toolLifeList)

Description

Get tool life information.

Arguments

ushort	flibHndl	Machine Handler Number
short	toolType	Tool Post Type
ref List<MachineToolLife>	toolLifeList	Life information by tool

Return

-99	Activate the license.
-98	Please check your license label.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Struct Name

MachineToolLifeInfo

Declaration

```
public struct MachineToolLifeInfo
    {
        public int length;
        public MachineToolLife[] toolLife;
    }
```

Arguments

int	length;	Length
MachineToolLife[]	toolLife	Tool Life List

Struct Name

MachineToolLife

Declaration

```
public struct MachineToolLife
    {
        public short toolNum;
        public int useCount;
        public int configCount;
        public int warningCount;
        public bool use;
    }
```

Arguments

Short	toolNum	Tool number
Int	useCount	Used count
Int	configCount	Target setting count of tool life
Int	warningCount	Warning setting count of tool life
bool	use	Whether tool life management is enabled

2. Function Description – 8) GetMachineToolOffsetInfo

Function Name

GetMachineToolOffsetInfo

Declaration

static short GetMachineToolOffsetInfo (ushort flibHndl, ref MachineToolOffsetInfo machineToolOffsetList)

Description

Get the tool offset information applied to the equipment.

Arguments

ushort	flibHndl	Machine Handler Number
ref MachineToolOffsetInfo	machineToolOffsetList	Offset information by tool

Return

-99	Activate the license.
-98	Please check your license label.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Struct Name

MachineToolOffsetInfo

Declaration

```
public struct MachineToolOffsetInfo
    {
        public short headType
        public int length;
        public int[] toolTipOffsetArray;
        public ToolOffsetData[] toolGeoOffsetArray;
        public ToolOffsetData[] toolWearOffsetArray;
    }
```

Arguments

short	headType	Path Type
int	length	length
int[]	toopTipOffsetArray	Tip offset List
ToolOffsetData[]	toolGeoOffsetArray	Geometry offset List
ToolOffsetData[]	toolWearOffsetArray	Wear offset List

Struct Name

ToolOffsetData

Declaration

```
public struct ToolOffsetData
    {
        public int no;
        public int r;
        public int x;
        public int y;
        public int z;
    }
```

Arguments

Int	no	Offset Number
Int	r	R * 1000
int	x	X * 1000
Int	y	Y * 1000
Int	z	Z * 1000

2. Function Description – 9) GetMotorTemperature

Function Name

GetMotorTemperature

Declaration

static short GetMotorTemperature (ushort flibHndl, ref MachineMotorTemperatureInfo machineMotorTemperatureInfo)

Description

Get the motor temperature of the equipment.

Arguments

ushort	flibHndl	Machine Handler Number
ref MachineMotorTemperatureInfo	machineMotorTemperatureInfo	Motor temperature list

Return

-99	Activate the license.
-98	Please check your license label.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Struct Name

MachineMotorTemperatureInfo

Declaration

```
public struct MachineMotorTemperatureInfo
    {
        public MotorTemperature[] mainMotorArray;
        public MotorTemperature[] subMotorArray;
        public MotorTemperature[] spindleMotorArray;
    }
```

Arguments

MotorTemperature[]	mainMotorArray	Path1 motor temperature
MotorTemperature[]	subMotorArray	Path2 motor temperature
MotorTemperature[]	spindleMotorArray	Spindle motor temperature

Struct Name

MotorTemperature

Declaration

```
public struct MotorTemperature
    {
        public string name;
        public string temperature;
    }
```

Arguments

string	name	Motor axis name
string	temperature	Temperature value

2. Function Description – 10) GetMachineProgramListInfo

Function Name

GetMachineProgramListInfo

Declaration

static short GetMachineProgramListInfo (ushort flibHndl, ref MachineProgramListInfo machineProgramListInfo)

Description

Get the list of programs by system of the machine.

Arguments

ushort	flibHndl	Machine Handler Number
ref MachineProgramListInfo	machineProgramListInfo	Program list

Return

-99	Activate the license.
-98	Please check your license label.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Struct Name

MachineProgramListInfo

Declaration

```
public struct MachineProgramListInfo
    {
        public short headType;
        public int length;
        public MachineProgramInfo[] programArray;
    }
```

Arguments

short	headType	Path Type
int	length	List Count
MachineProgramInfo[]	programArray	Program List

Struct Name

MachineProgramInfo

Declaration

```
public struct MachineProgramInfo
    {
        public string comment;
        public string programData;
        public double lastModDate;
        public short no;
        public bool opened;
        public bool isNew;
    }
```

Arguments

string	comment	Comment
double	programData	Program Data
double	lastModDate	Last edit date
short	no	Prog. Number
bool	opened	Activate prog.
bool	isNew	New Check

2. Function Description – 11) GetMachineActivateProgInfo

Function Name

GetMachineActivateProgInfo

Declaration

static short GetMachineActivateProgInfo (ushort flibHndl, ref MachineProgramInfo machineProgramInfo)

Description

Get the program information activated in the machine.

Arguments

ushort	flibHndl	Machine Handler Number
ref MachineCurrentProgInfo	machineActivateProgram	Information of the activated program

Return

-99	Activate the license.
-98	Please check your license label.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Struct Name

MachineProgramInfo

Declaration

```
public struct MachineProgramInfo
    {
        public string MainProgramComment;
        public string MainProgramName;
        public string MainProgramData;
        public string SubProgramComment;
        public string SubProgramName;
        public string SubProgramData;
    }
```

Arguments

string	MainProgramComment	Comment of main prog.
string	MainProgramName	Number of main prog.
string	MainProgramData	Data of main prog
string	SubProgramComment	Comment of sub prog.
string	SubProgramName	Number of sub prog.
string	SubProgramData	Data of sub prog

2. Function Description – 12) GetMachineProgramData

Function Name

GetMachineProgramData

Declaration

static short GetMachineProgramData (ushort flibHndl, ref MachineProgramData machineProgramData)

Description

Get data(program contents) for the requested program.

Arguments

ushort	flibHndl	Machine Handler Number
ref MachineProgramData	machineProgramData	Program contents information

Return

-99	Activate the license.
-98	Please check your license label.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Struct Name

MachineProgramData

Declaration

```
public struct MachineProgramData
    {
        public short headType;
        public short programNo;
        public string programData;
    }
```

Arguments

short	headType	Path Type(Path1, Path2)
short	programNo	Program contents
string	programData	Program Number

2. Function Description – 13) GetMachineAllOPInfo

Function Name

GetMachineAllOPInfo

Declaration

static short GetMachineAllOPInfo (ushort flibHndl, short panelType, ref List<IOInfo> ioInfoList)

Description

Get the OP (Operating Panel) status of the machine.

Arguments

ushort	flibHndl	Machine Handler Number
short	panelType	OP(Operating Panel) Type
ref List<IOInfo>	ioInfoList	List of states by button

Return

-99	Activate the license.
-98	Please check your license label.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Class Name

IOInfo

Declaration

```
public class IOInfo
    {
        public short IOUID;
        public string IOName;
        public short Status;
    }
```

Arguments

short	IOUID	Button UID
string	IOName	Button Name
short	Status	Button Status

2. Function Description – 14) SetMachineToolLife

Function Name

SetMachineToolLife

Declaration

static short SetMachineToolLife (ushort flibHndl, short toolType, MachineToolLife updateMachineToolLIfe)

Description

Update the tool life parameter value of the machine.

Arguments

ushort	flibHndl	Machine Handler Number
short	toolType	Tool Post Type
MachineToolLife	updateMachineToolLIfe	Tool Life Update Information

Return

-99	Activate the license.
-98	Please check your license label.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Struct Name

MachineToolLife

Declaration

```
public struct MachineToolLife
    {
        public short toolNum;
        public int useCount;
        public int configCount;
        public int warningCount;
        public bool use;
    }
```

Arguments

short	toolNum	Tool number
Int	useCount	Used count
Int	configCount	Target setting count of tool life
Int	warningCount	Warning setting count of tool life
bool	use	Whether tool life management is enabled

2. Function Description – 15) SetMachineToolOffsetConfInfo

Function Name

SetMachineToolOffsetConfInfo

Declaration

static short SetMachineToolOffsetConfInfo (ushort flibHndl, MachineToolOffsetInfo machineUpdateToolOffsetInfo)

Description

Update the setting value of tool offset.

Arguments

ushort	flibHndl	Machine Handler Number
MachineToolOffsetInfo	machineUpdateToolOffsetInfo	Set value of tool offset

Return

-99	Activate the license.
-98	Please check your license label.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Struct Name

MachineToolOffsetInfo

Declaration

```
public struct MachineToolOffsetInfo
    {
        public short headType
        public int length;
        public int[] toolTipOffsetArray;
        public ToolOffsetData[] toolGeoOffsetArray;
        public ToolOffsetData[] toolWearOffsetArray;
    }
```

Arguments

short	headType	Path Type
int	length	length
int[]	toopTipOffsetArray	Tip offset List
ToolOffsetData[]	toolGeoOffsetArray	Geometry offset List
ToolOffsetData[]	toolWearOffsetArray	Wear offset List

Struct Name

ToolOffsetData

Declaration

```
public struct ToolOffsetData
    {
        public int no;
        public int r;
        public int x;
        public int y;
        public int z;
    }
```

Arguments

Int	no	Offset Number
Int	r	R * 1000
int	x	X * 1000
Int	y	Y * 1000
Int	z	Z * 1000

2. Function Description – 16) SetMachineProgramInfo

Function Name

SetMachineProgramInfo

Declaration

static short SetMachineProgramInfo (ushort flibHndl, UpdateMachineProgramInfo updateMachineProgramInfo)

Description

Create or update programs.

Arguments

ushort	flibHndl	Machine Handler Number
UpdateMachineProgramInfo	updateMachineProgramInfo	Program Information

Return

-99	Activate the license.
-98	Please check your license label.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Struct Name

UpdateMachineProgramInfo

Declaration

```
public struct UpdateMachineProgramInfo
    {
        public short headType;
        public short programNo;
        public string programData;
        public bool isNew;
    }
```

Arguments

short	headType	Path Type (Path1, Path2)
short	programNo	Prog. number
string	programData	Prog. data
bool	isNew	Whether to create a program

2. Function Description – 17) DeleteMachineProgramInfo

Function Name

DeleteMachineProgramInfo

Declaration

static short DeleteMachineProgramInfo (ushort flibHndl, DeleteMachineProgramInfo deleteMachineProgramInfo, out short activateProgramNo)

Description

Delete the program from the machine.

Arguments

ushort	flibHndl	Machine Handler Number
DeleteMachineProgramInfo	deleteMachineProgramInfo	Delete program information
out short	activateProgramNo	Activated Program Number

Return

-99	Activate the license.
-98	Please check your license label.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Struct Name

DeleteMachineProgramInfo

Declaration

```
public struct DeleteMachineProgramInfo
    {
        public short headType;
        public short programNo;
}
```

Arguments

short	headType	Path Type
short	programNo	Program Number

2. Function Description – 18) SetActivateProgram

Function Name

SetActivateProgram

Declaration

static short SetActivateProgram (ushort flibHndl, ControllerType controllerType, UpdateMachineActivateProgNo update MachineActivateProgNo)

Description

Activate the program.

Arguments

ushort	flibHndl	Machine Handler Number
UpdateMachineActivateProgNo	updateMachineActivateProgNo	Activate Program Number

Return

-99	Activate the license.
-98	Please check your license label.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Struct Name

UpdateMachineActivateProgNo

Declaration

```
public struct UpdateMachineActivateProgNo
    {
        public short headType;
        public short programNo;
}
```

Arguments

short	headType	Path type
short	programNo	Program Number

2. Function Description – 19) SetMachinePanelIO

Function Name

SetMachinePanelIO

Declaration

static short SetMachinePanelIO (ushort flibHndl, short panelType, short ioUID, bool isSetBit)

Description

Update the button setting value of the equipment OP.

Arguments

ushort	flibHndl	Machine Handler Number
short	panelType	Operating panel type
short	ioUID	Button UID
bool	isSetBit	Button status

Return

-99	Activate the license.
-98	Please check your license label.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

Name

PanelConstants

Arguments

short	1	MACHINE_IO_OP_MAIN	Operation	short	38	MACHINE_IO_F_AUX2	Function
short	2	MACHINE_IO_OP_SIMUL	Operation	short	41	MACHINE_IO_DP_MAIN	Display
short	3	MACHINE_IO_OP_SUB	Operation	short	42	MACHINE_IO_DP_SUB	Display
short	11	MACHINE_IO_MS_EDIT	Mode Select	short	51	MACHINE_IO_RO_ZERO	Rapid
short	12	MACHINE_IO_MS_AUTO	Mode Select	short	52	MACHINE_IO_RO_QUARTER	Rapid
short	13	MACHINE_IO_MS_MDI	Mode Select	short	53	MACHINE_IO_RO_HALF	Rapid
short	14	MACHINE_IO_MS_HANDLE	Mode Select	short	54	MACHINE_IO_RO_FULL	Rapid
short	15	MACHINE_IO_MS_JOG	Mode Select	short	62	MACHINE_IO_C_STOP	Cycle
short	16	MACHINE_IO_MS_ZERORETURN	Mode Select	short	63	MACHINE_IO_C_CONT	Cycle
short	31	MACHINE_IO_F_DRYRUN	Function				
short	32	MACHINE_IO_F_SB	Function				
short	33	MACHINE_IO_F_MPG	Function				
short	34	MACHINE_IO_F_COOL	Function				
short	35	MACHINE_IO_F_OILMIST	Function				
short	36	MACHINE_IO_F_WARMUP	Function				
short	37	MACHINE_IO_F_AUX1	Function				

2. Function Description – 20) SetMachineReset

Function Name

SetMachineReset

Declaration

static short SetMachineReset (ushort flibHndl)

Description

Activate the reset button of the machine.

Arguments

ushort	flibHndl	Machine Handler Number

Return

-99	Activate the license.
-98	Please check your license label.
-8	Invalid communication handler number used.
-7	CNC controller type is invalid.
0	Normal operation

2. Function Description – 21) General Error List

Return	Meaning	Explanation and Error handling
EW_PROTOCOL (-17)	Protocol error (Ethernet version only)	Data from Ethernet Board is incorrect. Contact with the service section or the section in charge.
EW_SOCKET (-16)	Socket error (Ethernet version only)	Investigate CNC power supply, Ethernet cable and I/F board.
EW_NODLL (-15)	DLL file error	There is no DLL file for each CNC series corresponding to specified node.
EW_BUS (-11)	Bus error (HSSB version only)	A bus error of CNC system occurred. Contact with the service section or the section in charge.
EW_SYSTEM2 (-10)	System error (2) (HSSB version only)	A system error of CNC system occurred. Contact with the service section or the section in charge.
EW_HSSB (-9)	Communication error of HSSB (HSSB version only)	Investigate the serial line or I/F board of HSSB.
EW_HANDLE (-8)	Handle number error	Get the library handle number.
EW_VERSION (-7)	Version mismatch between the CNC/PMC and library	The CNC/PMC version does not match that of the library. Replace the library or the CNC/PMC control software.
EW_UNEXP (-6)	Abnormal library state	An unanticipated error occurred. Contact with the section in charge.
EW_SYSTEM (-5)	System error (HSSB version only)	A system error of CNC occurred. Contact with the service section or the section in charge.
EW_PARITY (-4)	Shared RAM parity error (HSSB version only)	A hardware error occurred. Contact with the service section.
EW_MMCSYS (-3)	FANUC drivers installation error (HSSB version only)	The drivers required for execution are not installed.
EW_RESET (-2)	Reset or stop request	The RESET or STOP button was pressed. Call the termination function.
EW_BUSY (-1)	Busy	Wait until the completion of CNC processing, or retry.
EW_OK (0)	Normal termination	
EW_FUNC (1)	Error(function is not executed, or not available)	Specific function which must be executed beforehand has not been executed. Otherwise that function is not available.
EW_LENGTH (2)	Error(data block length error, error of number of data)	Check and correct the data block length or number of data.
EW_NUMBER (3)	Error(data number error)	Check and correct the data number.
EW_ATTRIB (4)	Error(data attribute error)	Check and correct the data attribute.
EW_DATA (5)	Error(data error)	Check and correct the data. For the following operations, this code indicates that the specified program cannot be found. • Delete specified program • Search specified program • Start uploading NC program
EW_NOOPT (6)	Error(no option)	There is no corresponding CNC option.
EW_PROT (7)	Error(write protection)	Write operation is prohibited.
EW_OVRFLOW (8)	Error(memory overflow)	CNC tape memory is overflowed.
EW_PARAM (9)	Error(CNC parameter error)	CNC parameter is set incorrectly.
EW_BUFFER (10)	Error(buffer empty/full)	The buffer is empty or full. Wait until completion of CNC processing, or retry.
EW_PATH (11)	Error(path number error)	A path number is incorrect.
EW_MODE (12)	Error(CNC mode error)	The CNC mode is incorrect. Correct the CNC mode.
EW_REJECT (13)	Error(CNC execution rejection)	The execution at the CNC is rejected. Check the condition of execution.
EW_DTSRVR (14)	Error(Data server error)	Some errors occur at the data server.
EW_ALARM (15)	Error(alarm)	The function cannot be executed due to an alarm in CNC. Remove the cause of alarm.
EW_STOP (16)	Error(stop)	CNC status is stop or emergency.
EW_PASSWD (17)	Error(State of data protection)	Data is protected by the CNC data protection function.

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CHAPTER. 3
Trouble Shooting

1) Error No.22 : License
2) Error No.-100 : Redistribute Package
3) The value of NC type or tool post type is ‘-1’

Hanwha

3. Trouble Shooting – 1) Error No.22 : License

- Error Situation

  - After serial number authentication, error 22 occurs when re-executing the program and opening communication

- Trouble Shooting

  1) Window Key + R

  2) Key-in ‘Regedit’

  3) HKEY_CURRENT_USER

     -> SOFTWARE

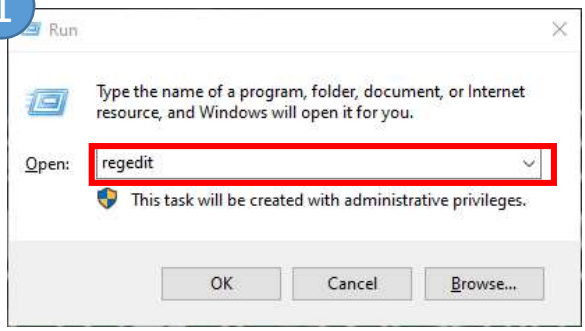
     -> Mouse Right click

     -> Permissions

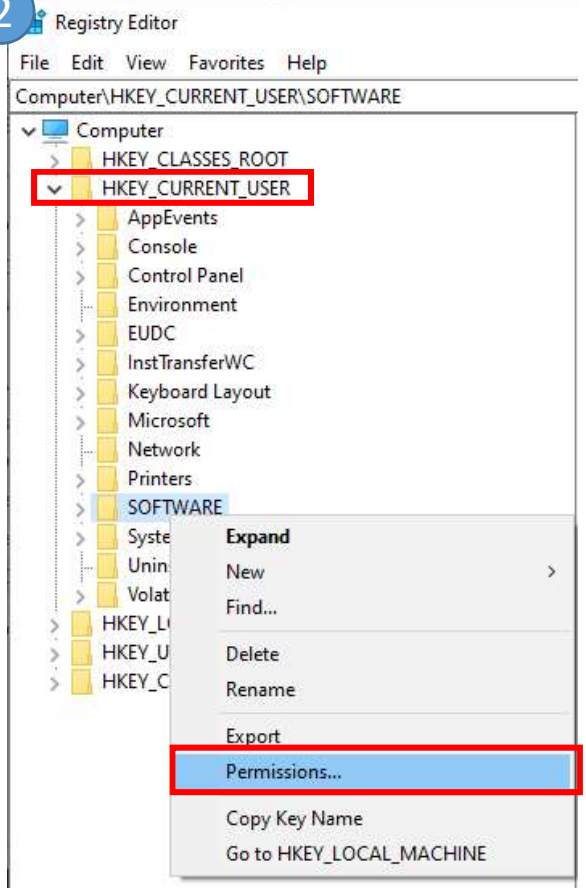
  4) Select the user

  5) Check the allow box

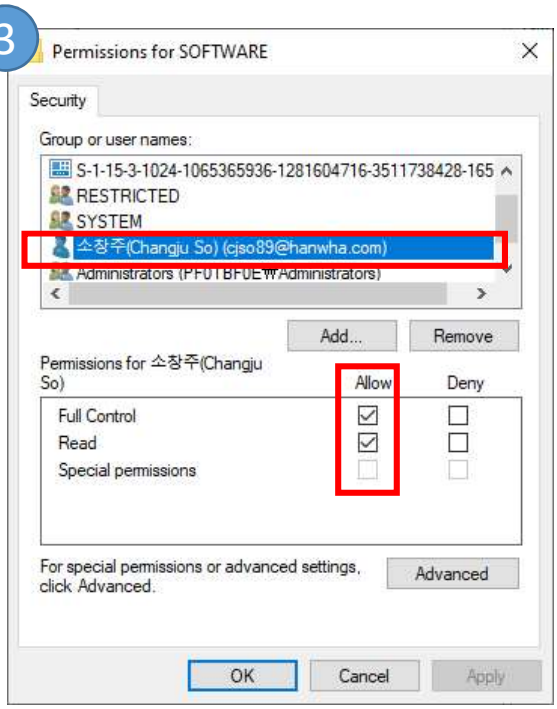
1



2



3



3. Trouble Shooting – 2) Error No.-100 : Redistribute Package

- Error Situation

  - Error -100 occurs when communication is open

- Trouble shooting

  1) First, check the IP and Router

  2) If the error still occurs, copy and paste the .dll in the ‘Error -100’ folder included in the package to the address below.

  : Windows 32bit – C:\Windows\System

  : Windows 64bit – C:\Windows\SysWOW64