

- ✓ **Front-end numerical instant operation**
- ✓ **Front-end I/O instant control**
- ✓ **Easy to use function library**
- ✓ **Compatible with Modbus communication protocol**
- ✓ **Complete IDE development environment**
- ✓ **Online code debugging**
- ✓ **Suitable for LLD-RIO product line**

Production introduction

LLD-DDC is a set of dedicated real-time data processing development kits for LLD-RIO product line, referred to as DDC, which includes: data processing engine on dedicated products, host-side (PC) program development environment and dedicated function library. This software can run on LLD's RIO product line, such as LLD-ModbusIO-01, LLD-Modbus32E-01...etc.

DDC is the abbreviation of Direct Digital Control, which is focus on distributed monitoring applications. It can perform the first time numerical calculation or I/O control through DDC program on the front-end data acquisition and control to meet the needs of real-time monitoring. It is often used in instant messaging systems such as central air conditioning monitoring and emergency alert systems. .

☒ **Small and beautiful data processing engine**

LLD-DDC is available in 8-bit and 32-bit engines .
LLD-DDC8 is an 8-bit installed in LLD-ModbusIO series .
LLD-DDC32E is a 32-bit installed in LLD-Modbus32E remote I/O control module series .
In addition to data/command transmission via RS-485 、 Ethernet with host , these remote I/O modules can also complete the first time data processing or real-time control at the front end , greatly improving the real-time monitoring efficiency of the entire system .

☒ **Easy to use function library (API)**

LLD-DDC provides more than 50 easy-to-use functions (APIs) for logic comparison , real-time control , numerical calculation, timing and other data processing functions . It also provides some advanced specified functions such as PID 、 HVAC etc., can easily meet the functional requirements of automated monitoring .

☒ **DDC Program Protection**

The LLD-DDC program can be uploaded to the LLD-RIO product through special tools . When the system is still under development , the developer can download the program from the LLD-RIO product to the host for debugging and optimization . When the development is completed , the DDC program could be locked into a state that can only be uploaded but no longer be downloaded from LLD-RIO product to protect the wisdom of developers .

☒ **Applicable to Modbus protocol**

The LLD-DDC control method of the data and monitoring points is compatible with the data types and addressing methods of Coil and Register commonly used in Modbus protocol . When the DDC runs on the LLD-RIO product , regardless of the monitoring point corresponding to the LLD-RIO I/O module and the additional memory space used by the DDC program, the Modbus protocol communicates with the remote host for all data or status can also be used in addition to the parameter type of the internal function .

☒ **Complete DDC program development environment**

The LLD-DDC kit features an easy-to-use management tool , a windowed design with function menu and DDC coding capabilities which makes it easy for LLD-DDC programmers .

The LLD-DDC management tool has a DDC program reference example and an online manual search function . Besides it also has the management and testing functions of LLD-RIO products . Through this tool, users can not only develop DDC programs but also upload/download DDC programs to LLD-RIO products or debug the code on line .

☒ **On-site monitoring**

LLD-DDC is mainly to enable the I/O control module to have basic data calculation and process capability in the front end , so that the I/O module equipped with DDC can respond instantly and greatly reduce the waiting time for remote host computing and command transmission . For example , when an analog input (AI)/ temperature is read which exceeds a defined value after the DDC operation , then it will cause the Relay output (DO)/ of the module to be triggered immediately.

☒ **Power outage state memory**

When the LLD-DDC engine runs on the LLD-RIO product line , the LLD-RIO product is equipped with FRAM (memory with the power-off saving data characteristics) , so the important data or real-time status can be written to this block quickly or periodically as an important backup by DDC program .

When an unexpected power outage occurs in the system , the latest status and data before the power failure can be retrieved and reconfigured through the DDC program during the hardware restart next time to ensure the system be operated more stably .

LLD-DDC Specification

DDC Program Space

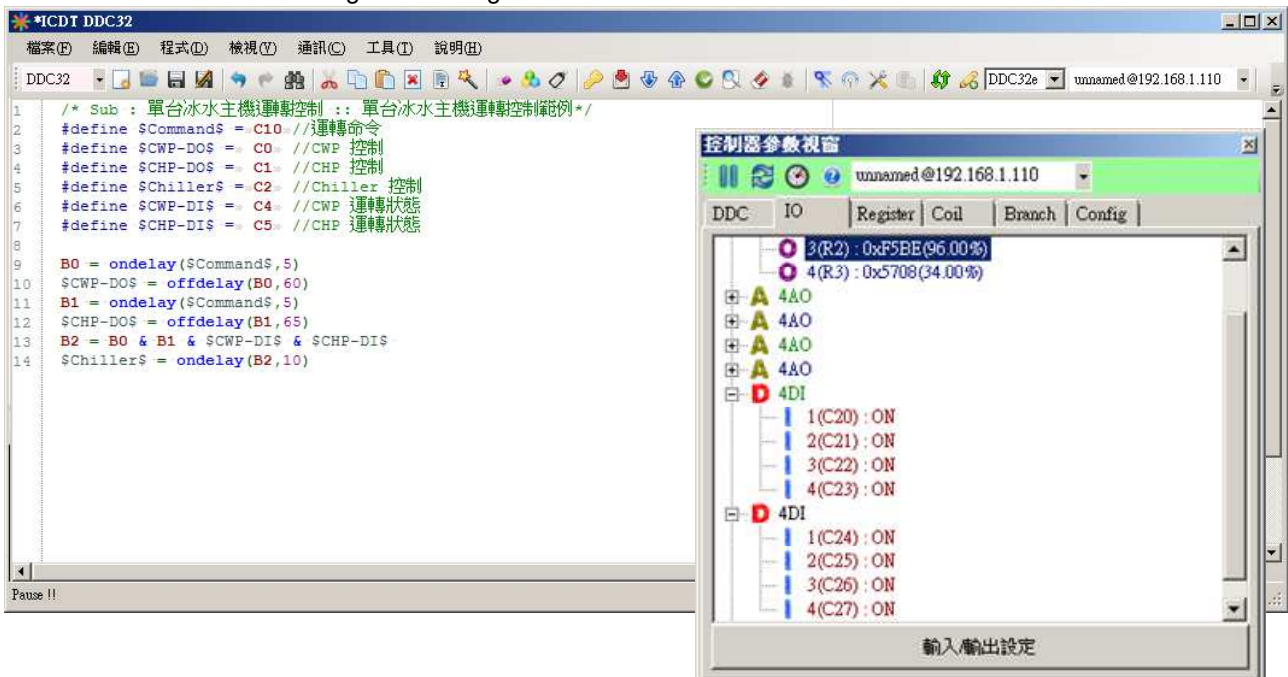
- ▶ LLD-DDC8 : 1.5KB
- ▶ LLD-DDC32 : 16KB

DDC 7 major category function library

- ▶ Time operation function
- ▶ Mathematical operation function
- ▶ Digital input function
- ▶ Digital output function
- ▶ Comparison function
- ▶ PID specified function
- ▶ HVAC specified function

Management tool function

- ▶ DDC Program coding space
- ▶ DDC Program upload and download
- ▶ Chinese online manual · lower the entry threshold
- ▶ Sub-programming features provide code management, application examples, and common Q&A references
- ▶ LLD-RIO Product series setting and management functions



LLD-DDC Product Model Number

- ▶ **LLD-DDC8**
LLD-ModbusIO Modbus-RTU series dedicated DDC S/W package
- ▶ **LLD-DDC32E**
LLD-Modbus32E Modbus-TCP series dedicated DDC S/W package