

# DYNASERVO

Reliable, Affordable and High Performance



## Ladder Motion

### Integrated Ladder Logic and Motion Control Language

**Ladder Motion** is an advanced motion control programming language integrating ladder logic and motion control concepts. Ladder Motion amalgamates sequential functionality of ladder logic and the versatile precision of motion control into a dedicated and flexible programming language, which offers simplicity, versatility and above all extraordinary cost effectiveness, and provides a single development environment for factory automation applications.



Sample Screen of WinPLC

#### Features:

- An integration of ladder logic with motion control
- Operates with DYNASERVO standalone, IMC-1X, TPC1, and PCI bus type motion controllers
- Supports control of a system with up to 16 servo motors and 256DI/256DO
- High speed serial communications (RS485@625Kbps, RS422@2.5Mbps)
- Windows-based programming tool WinPLC (Windows 9x, 2000, NT)
- Easy system setting
- Easy interface with touchscreen terminals
- On-line system monitoring with WinPLC
- Direct access to **Atom** servo drive
- 6310 words of data memory
- 1888 user relays
- 512 timers and counters

#### Benefits:

- Simplified system design
- Unified programming platform
- Eliminates the need for PLC
- Increased system reliability
- Reduced development time
- Reduced labor and material costs

#### Applications:

- Electronic processing equipment
- Automated assembly systems
- Packaging systems
- Material handling systems
- Metal fabricating machines
- Industrial robotic systems

#### Motion Commands:

ORG	Homing
RMV	Relative move
AMV	Absolute move
PMV	Move to point data
VSPD	Speed control
SPD	Change speed
PDS	Point data write
PDG	Point data read
DISP	Display message via RS232C
MT1	Output message to handheld terminal

#### Special Relays for Motion Control:

O**06, O**07	JOG operation
O**00	Emergency stop
NR00**	<i>Atom</i> PTP ready relay
NR02**	<i>Atom</i> hold off relay
NR04**	<i>Atom</i> JOG ready relay
NR06**	<i>Atom</i> home completion relay
NR12**	<i>Atom</i> in moving relay
NR14**	<i>Atom</i> move completion relay
NR16**	<i>Atom</i> error relay

“\*\*” represents axis number

Table of Relays:

Channel No.	Relay No.	Description		Total No.
000~015CH	00000~01515	<b>Fics-IOM</b> input relays		256
016~031CH	01600~03115	<b>Fics-IOM</b> output relays		256
032~149CH	03200~14915	User relays		1888
150~204CH	15000~18015	System reserved		
	18100~18515	Ladder Motion Controller input relays		
	18600~18615	Display control relays		
	18700~20015	System reserved		
	20100~20407	Ladder Motion Controller output relays		
05~255CH	20500~21515	Special relays	Ladder Motion Controller special relays	
	21600~21915		Error relays	
	22000~22715		<b>Fics-RT1</b> keyboard array data	
	22800~22915		System reserved	
	23000~23015		<b>Fics-RT1</b> key input	
	23100~23115		Ladder Motion conversion key code	
	23200~23215		System reserved	
	23300~23315		<b>Atom</b> Axis No. [MAX:16]	
	23400~23415		<b>Atom</b> -MFB Axis No. [MAX:4]	
	23500~23515		<b>Atom</b> mask bit	
	23600~23615		System reserved (for <b>Atom</b> extension)	
	23700~24715		System reserved	
	24800~24815		Version No.	
	24900~24915		Revision No.	
	25000~25015		System reserved	
25100~25515	System control relays			
AI01~20CH	AI0100~2015	<b>Atom</b> relays	<b>Atom</b> status input, universal digital input,	L00~L19CH
AS01~20CH	AS0100~2015		<b>Atom</b> sensor input, limit switch	L20~L39CH
AO01~20CH	AO0100~2015		<b>Atom</b> control output, <b>Atom</b> -MFB digital output	L40~L59CH
—	TR0~7	Temporary memory relay(TR)		8
HR00~99CH	HR0000~9915	Hold relays(HR)		1600
NR00~27CH	NR0000~2715	Network relays(NR) RS232C port control relays <b>Atom</b> status relays		AR00~ AR27CH 448
TIM/CNT000~511		Timer/Counter (TIM/CNT)		512
DM0000~6199		Data memory (DM)	Readable & Writable	6200(WORD)
DM6200~6219			<b>Atom</b> status error code	20(WORD)
DM6220~6309			System reserved	90(WORD)
DM6310~6509			<b>Atom</b> data	200(WORD)
DM6510~6644			System reserved	135(WORD)
DM6645~6655			RS232C set data	11(WORD)
VR001~096		32 bits data memory(VR)		96(long WORD)
PD01~99*Axis No.		32 bits Point Data memory (PD)		(long WORD)