WINDER SOLUTIONS
Inverter Application Software
Based on OMRON’s experience in winder applications, the RX inverter offers four times faster torque control loop. In addition to this torque control loop improvement, the solution includes dedicated application functions such as diameter calculation without sensor, winder/unwinder bidirectional modes and tension control by either torque or PID. The built-in programming functionality also offers a set of software libraries for your winder application.

**TENSION CONTROL BY TORQUE**
- No load cell or dancer needed
- RX inverter series in closed loop vector control

**Diameter calculation**
- With or without diameter sensor
- Both Torque control and PID control

**TENSION CONTROL BY PID**
- Load cell or dancer is needed
- MX2 & RX inverter series can work in this mode
Winder & Unwinder mode
- Both can work in forward or reverse
- Both are available in torque and PID tension control modes

Machine loses compensation
- Static and dynamic friction compensation
- Effective tension control by Torque

Dedicated monitors
- Like diameter or final product torque reference are supported
- New monitors can be implemented based on application needs
...for Winder Solutions

The Omron Winder Inverter Application Software Library has been developed using different functions for tension control by torque or PID regulation. Additionally, CX-Drive Programming enables existing functions to be adapted to customers’ needs. New functions can also be created resulting in exclusive, tailor-made solutions. Customers may also develop their own application software with the CX-Drive Programming open tool.

Tension correction by diameter

The Taper function compensates for the non-linear effects of winding tension causing telescoping and excessive crushed rolls. These effects may appear even with the correct diameter, PID regulation and/or correct torque set point calculation. Taper provides a tension compensation curve based on diameter.

Speed response adaptation

- Dynamic rigidity is calculated depending on diameter

Diameter preset, Reset and Freeze functions
APPLICATION SOFTWARE LIBRARIES

Benefit from using Omron’s Inverter Application Software Library which provides solutions for cranes, winders, positioning, water and energy as well as other areas which will be launched in the future. Omron’s inverter application software can be customised to meet specific customer needs...

...or just create your ones by using the CX-Drive Programming tool included in the standard CX-Drive software, which features:

- Flow chart and text editor programming languages
- 5 tasks running simultaneously with up to 1000 lines per program
- Full access to parameters and inverter functions
- Access to an LCD real time clock

RX INVERTER
- Supports winder Tension control by:
  - Torque in closed loop vector control
  - PID in open loop & closed loop vector control

MX2 INVERTER
- Supports winder Tension control by:
  - PID in open loop vector control

Winder

Cranes

Positioning

Water
RX Inverter

- Power range up to 132 kW
- Sensor-less and closed-loop vector control
- High starting torque in open loop (200% at 0.3 Hz)
- Full torque at 0 Hz in closed-loop
- Double rating VT 120%/1 min and CT 150%/1 min
- Built-in application functionality: ELS (Electronic Line Shaft), brake control, load over speed control

### 200 V class

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### Software Tool

- CX-Drive with Drive Programming functionality

### Application Libraries

- **Crane**
  - TOWER
  - LUFFING
  - GRAB
  - GANTRY
- **Winder**
  - TORQUE CONTROL
  - PID CONTROL
- **Water**
  - PUMP SEQ
- **Positioning**
  - EXTRA POSITIONING

*Note: Please contact your OMRON representative for detailed specifications and ordering information.*
MX2 Inverter

- Power range up to 15 kW
- Torque control in open loop
- 200% starting torque (at 0.5 Hz)
- Double rating VT 120%/1 min and CT 150%/1 min
- Models with IP54 housing protection
- 24 VDC backup supply for control board and communication
- Built-in application functionality (i.e. Brake control)

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</table>

Selection guide: KPP_MX2_EN_INT

SOFTWARE TOOL

- CX-Drive with Drive Programming functionality

APPLICATION LIBRARIES

- **Winder**
  - PID CONTROL
- **Water**
  - PUMP_SEQ
- **Hoist & Lift**
  - LIFT
- **Textile**
  - TRAVERSE
- **Energy**
  - SOLAR TRAK

*Note: Please contact your OMRON representative for detailed specifications and ordering information.
Automation Systems
• Programmable logic controllers (PLC) • Human machine interfaces (HMI) • Remote I/O
• Industrial PC’s • Software

Motion & Drives
• Motion controllers • Servo systems • Inverters • Robots

Control Components
• Temperature controllers • Power supplies • Timers • Counters • Programmable relays
• Digital panel indicators • Electromechanical relays • Monitoring products • Solid-state relays
• Limit switches • Pushbutton switches • Low voltage switch gear

Sensing & Safety
• Photoelectric sensors • Inductive sensors • Capacitive & pressure sensors
• Cable connectors • Displacement & width-measuring sensors • Vision systems
• Safety networks • Safety sensors • Safety units/relay units • Safety door/guard lock switches

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