

WINDER SOLUTIONS

Inverter Application Software



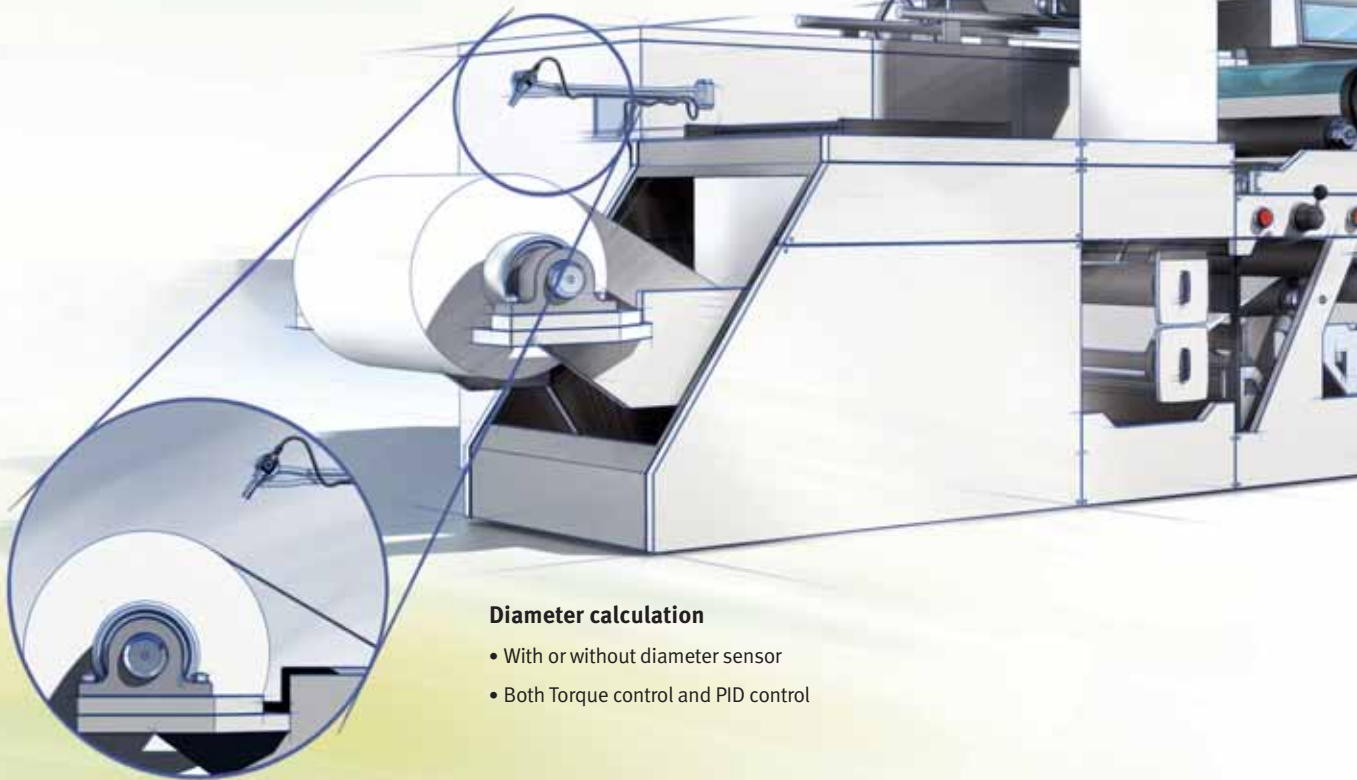
Inverter Application Software...

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



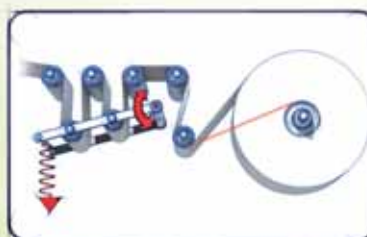
Diameter calculation

- With or without diameter sensor
- Both Torque control and PID control

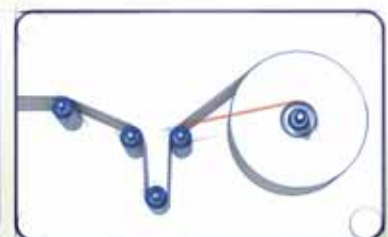


TENSION CONTROL BY PID

- Load cell or dancer is needed
- MX2 & RX inverter series can work in this mode



DANCER

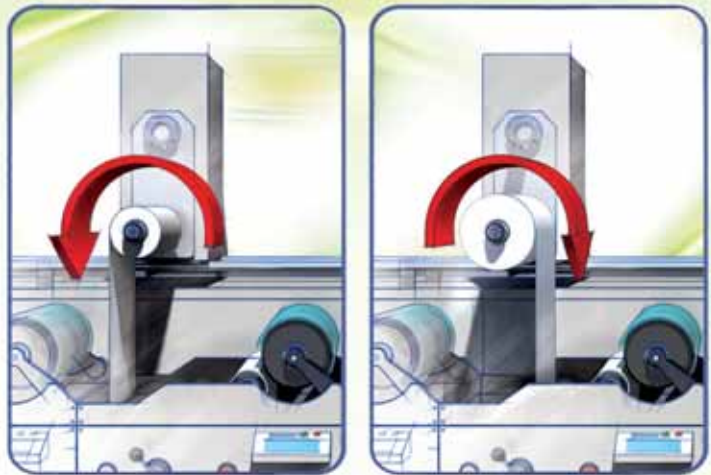


LOAD CELL



Winder & Unwinder mode

- Both can work in forward or reverse
- Both are available in torque and PID tension control modes



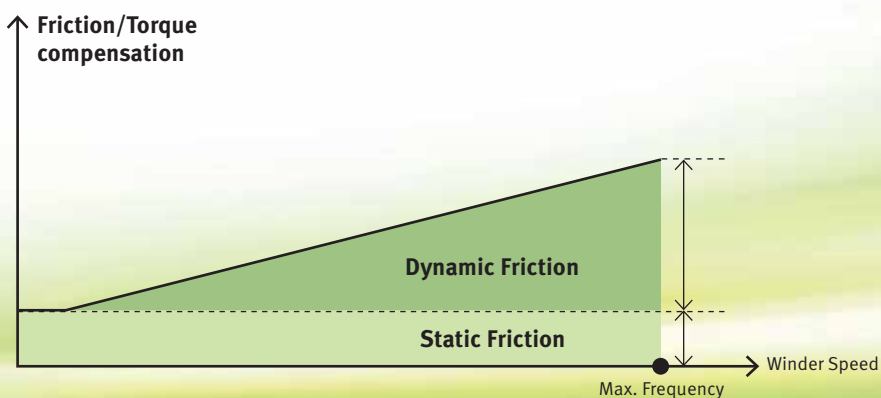
Machine losses compensation

- 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



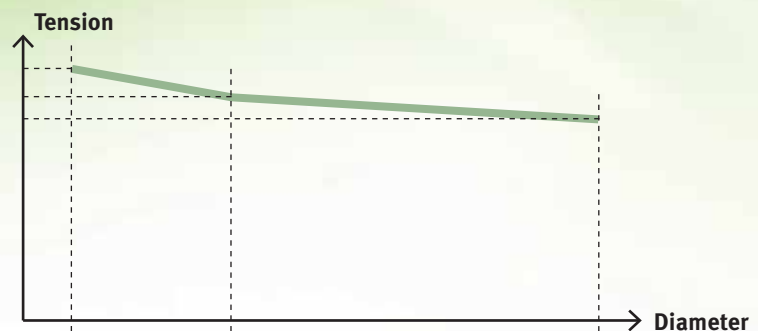
...for Winder Solutions

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



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

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

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

Three-phase: 3G3RX-□□□□-V1			A2004	A2007	A2015	A2022	A2037	A2055	A2075	A2110	A2150	A2185	A2220	A2300	A2370	A2450	A2550
Output characteristics	Max. applicable motor 4P kW	at CT	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55
		at VT	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75
	200 V	at CT	1.0	1.7	2.5	3.6	5.7	8.3	11	15.9	22.1	26.3	32.9	41.9	50.2	63	76.2
		at VT	1.3	2.1	3.2	4.1	6.7	10.4	15.2	20	26.3	29.4	39.1	49.5	59.2	72.7	93.5
	240 V	at CT	1.2	2.0	3.1	4.3	6.8	9.9	13.3	19.1	26.6	31.5	39.4	50.2	60.2	75.6	91.4
		at VT	1.5	2.6	3.9	5.0	8.1	12.4	18.2	24.1	31.5	35.3	46.9	59.4	71	87.2	112.2
	Rated output current (A)		at CT	3.0	5.0	7.5	10.5	16.5	24	32	46	64	76	95	121	145	220
			at VT	3.7	6.3	9.4	12	19.6	30	44	58	73	85	113	140	169	270

400 V class

Three-phase: 3G3RX-□□□□-V1				A4004	A4007	A4015	A4022	A4040	A4055	A4075	A4110	A4150	A4185	A4220	A4300	A4370	A4450	A4550	B4750	B4900	B411K	B413K
Max. applicable motor 4P kW			at CT	0.4	0.75	1.5	2.2	4.0	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132
			at VT	0.75	1.5	2.2	4.0	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160
Output characteristics	Inverter capacity KVA	400 V	at CT	1.0	1.7	2.5	3.6	6.2	9.7	13.1	17.3	22.1	26.3	33.2	40.1	51.9	63	77.6	103.2	121.9	150.3	180.1
			at VT	1.3	2.1	3.3	4.6	7.7	11	15.2	20.9	25.6	30.4	39.4	48.4	58.8	72.7	93.5	110.8	135	159.3	200.9
		480 V	at CT	1.2	2.0	3.1	4.3	7.4	11.6	15.8	20.7	26.6	31.5	39.9	48.2	62.3	75.6	93.1	128.3	146.3	180.4	216.1
			at VT	1.5	2.5	4.0	5.5	9.2	13.3	18.2	24.1	30.7	36.5	47.3	58.1	70.6	87.2	112.2	133	162.1	191.2	241.1
	Rated output current (A)	at CT	1.5	2.5	3.8	5.3	9.0	14	19	25	32	38	48	58	75	91	112	149	176	217	260	
		at VT	1.9	3.1	4.8	6.7	11.1	16	22	29	37	43	57	70	85	105	135	160	195	230	290	

Software*

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

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)

200 V class													
Single-phase: 3G3MX2-□□□□-V1			B001	B002	B004	B007	B015	B022	-	-	-	-	
Three-phase: 3G3MX2-□□□□-V1			2001	2002	2004	2007	2015	2022	2037	2055	2075	2110	2150
Motor kW		For VT setting	0.2	0.4	0.55	1.1	2.2	3.0	5.5	7.5	11	15	18.5
		For CT setting	0.1	0.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15
Output characteristics	Inverter capacity kVA	200 VT	0.4	0.6	1.2	2.0	3.3	4.1	6.7	10.3	13.8	19.3	23.9
		200 CT	0.2	0.5	1.0	1.7	2.7	3.8	6.0	8.6	11.4	16.2	20.7
		240 VT	0.4	0.7	1.4	2.4	3.9	4.9	8.1	12.4	16.6	23.2	28.6
		240 CT	0.3	0.6	1.2	2.0	3.3	4.5	7.2	10.3	13.7	19.5	24.9
	Rated output current (A) at VT		1.2	1.9	3.5	6.0	9.6	12.0	19.6	30.0	40.0	56.0	69.0
	Rated output current (A) at CT		1.0	1.6	3.0	5.0	8.0	11.0	17.5	25.0	33.0	47.0	60.0
400 V class													
Three-phase: 3G3MX2-□□□□-V1			4004	4007	4015	4022	4030	4040	4055	4075	4110	4150	
Motor kW		For VT setting	0.75	1.5	2.2	3.0	4.0	5.5	7.5	11	15	18.5	
		For CT setting	0.4	0.75	1.5	2.2	3.0	4.0	5.5	7.5	11	15	
Output characteristics	Inverter capacity kVA	380 VT	1.3	2.6	3.5	4.5	5.7	7.3	11.5	15.1	20.4	25.0	
		380 CT	1.1	2.2	3.1	3.6	4.7	6.0	9.7	11.8	15.7	20.4	
		480 VT	1.7	3.4	4.4	5.7	7.3	9.2	14.5	19.1	25.7	31.5	
		480 CT	1.4	2.8	3.9	4.5	5.9	7.6	12.3	14.9	19.9	25.7	
	Rated output current (A) at VT		2.1	4.1	5.4	6.9	8.8	11.1	17.5	23.0	31.0	38.0	
	Rated output current (A) at CT		1.8	3.4	4.8	5.5	7.2	9.2	14.8	18.0	24.0	31.0	

Software*

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.



Singapore Office:

OMRON ELECTRONICS PTE. LTD.
438A Alexandra Road, #05-05/08
(Lobby 2) Alexandra Technopark
Singapore 119967
Tel: (65) 6547 6789
Fax: (65) 6547 6769
E-mail: mktg_sg@ap.omron.com



Malaysia Office:

OMRON ELECTRONICS SDN. BHD.
1101 Level 11 Uptown 1
1 Jalan SS21/58 Damansara Uptown
47400 Petaling Jaya, Selangor
Malaysia
Tel: (60-3) 7688 2888
Fax: (60-3) 7688 2833
E-mail: my_enquiry@ap.omron.com



Thailand Office:

OMRON ELECTRONICS CO. LTD.
Rasa Tower 2 16th Floor
555 Phaholyothin Road
Chatuchak, Bangkok
10900, Thailand
Tel: (66-2) 937 0500
Fax: (66-2) 937 0501
CRM Call Centre: (66-2) 942 6700
E-mail: th_enquiry@ap.omron.com



Indonesia Office:

PT. OMRON ELECTRONICS
Menara Bidakara 1 Lantai 22
Jl. Jend. Gatot Subroto Kav. 71-73
Jakarta - 12870
Indonesia
Tel: (62-21) 2949 7500
Fax: (62-21) 2949 7555
E-mail: id_enquiry@ap.omron.com



Philippines Office:

OMRON ASIA PACIFIC PTE. LTD.
MANILA REPRESENTATIVE OFFICE
2nd Floor, Kings Court II Building
2129 Do Chino Roces Avenue
Corner Dela Rosa Street
1231 Makati City, Metro Manila
Philippines
Tel: (63-2) 811 2831
Fax: (63-2) 811 2583
E-mail: ph_enquiry@ap.omron.com



Australia Offices:

Sydney Office:
OMRON ELECTRONICS PTY. LTD.
Unit 6, 108 Silverwater Road,
Silverwater
Sydney, New South Wales 2128
Australia
Tel: (61-2) 9878 6377
Fax: (61-2) 9878 6981
Toll Free: 1300 766 766
E-mail: au_enquiry@ap.omron.com

Melbourne Office:

OMRON ELECTRONICS PTY. LTD.
Suites G.03, Building B,
18-24 Ricketts Road,
Mt Waverley Victoria 3149
Australia
Tel: (61-3) 8588 2600
Fax: (61-3) 8588 2690
E-mail: au_enquiry@ap.omron.com

Brisbane Office:

OMRON ELECTRONICS PTY. LTD.
Unit 14, 1378 Lytton Road
Hemmant 4174, Queensland
Australia
Tel: (61-7) 3859 3900
Fax: (61-7) 3348 8701
E-mail: au_enquiry@ap.omron.com



New Zealand Office:

OMRON ELECTRONICS LTD.
65 Boston Road, Mt Eden
Private Bag 92620
Symonds Street, Auckland
New Zealand
Tel: (64-9) 358 4400
Fax: (64-9) 358 4411
E-mail: nz_enquiry@ap.omron.com



India Offices:

Mumbai Office:
OMRON AUTOMATION PVT. LTD.
THE QUBE, 5th Floor, Unit No. 501 - 502,
M V Road, Marol, Andheri East,
Mumbai 400059,
India
Tel: (91-22) 4228 8400
Fax: (91-22) 4275 5602
E-mail: in_enquiry@ap.omron.com

Bangalore Office:

OMRON AUTOMATION PVT. LTD.
Unit 401 – 402, 3rd Floor, Prestige Atrium,
No 1, Central Street, Civil Station,
Bangalore 560001,
India
Tel: (91-80) 6709 6400/6406
Fax: (91-80) 6709 6403/6408
E-mail: bangalore_enquiry@ap.omron.com

Gurgaon Office:

OMRON AUTOMATION PVT. LTD.
No.108 &103-106, 1/F, Sewa Corporation Park,
MG Road, Gurgaon, Haryana 122002
India
Tel: (91-124) 4921 700
Fax: (91-124) 4921 777
E-mail: newdelhi_enquiry@ap.omron.com



Vietnam Offices:

OMRON ASIA PACIFIC PTE. LTD.
HANOI REPRESENTATIVE OFFICE
9th floor, Mipec Tower,
229 Tay Son, Dong Da, Hanoi, Vietnam
Tel: (84-4) 3556 3444
Fax: (84-4) 3556 3443
E-mail: hn_enquiry@ap.omron.com

HO CHI MINH REPRESENTATIVE OFFICE

2nd Floor, IWA, 102 A-B, Cong Quynh,
P. Pham Ngu Lao, Q1, TP. Ho Chi Minh
SR Vietnam
Tel: (84-8) 3920 4338
Fax: (84-8) 3920 4335
E-mail: hcm_enquiry@ap.omron.com

Asia Pacific Head Office:

OMRON ASIA PACIFIC PTE. LTD.

438A Alexandra Road
#05-05/08
(Lobby 2) Alexandra Technopark
Singapore 119967
Tel: (65) 6835 3011 Fax: (65) 6835 2711
E-mail: ask@ap.omron.com

Website: www.omron-ap.com

Authorized Distributor