

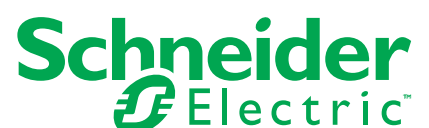
The all in one system for effective protection and load control

> Acti 9 Reflex iC60

Integrated control circuit breaker
Technical guide



Acti 9: The efficiency you deserve



Reflex iC60

The all-in-one integrated control circuit breaker

A complement to the Acti 9™ system and exclusive to Schneider Electric, the Reflex iC60 combines an MCB (miniature circuit breaker) with an internal actuator. Designed to evolve and adapt with the dynamic requirements of tertiary and industrial lighting control applications, it easily communicates with PLCs without the need for add-ons, retrofits or extras. It is especially dedicated to the load remote management of tertiary buildings & industrial plants which combine local control and centralised control with a number of switching operations.

Ti24 interface

for connection to Acti 9 Smartlink or PLC

ComReady

Available only from Schneider Electric

Integrated padlocking

for complete safety

3 operating modes

for all applications

VisiSafe

Integrated signalisation

Latched and impulse orders

Protection against short circuits and overloads

'With the Reflex iC60 we saved 15 percent on our energy use, due to its simplified control of lighting circuits. Normal lighting is controlled remotely by the controller (PLC) based on periods of activity and selected lighting. As a result, daily control of our loads is simple. Installation was easy; the 'all in one' concept reduced power terminal wiring by 50 percent. Plus, the Reflex iC60 allows direct connection to the PLC without any low current interfaces'.

H. Rascon, building technician



25%

space savings due to all in one design

24 V

direct connection to PLC or BMS

coordination between MCB and actuator

Reflex iC60H (curves C, D) (cont.)

- Tripping and disconnection device capable of:
 - disconnecting and padlocking (Ø 3 to 6 mm not supplied) in "open" position
 - neutralising remote control

- Ti24 interface for direct link to PLC and Acti 9 Smartlink

ComReady

PE105980-70

- Operating state indicator lamp

- IP20 insulated terminals

- Bi-stable operation: does not change state in the event of electrical power outage

- Resetting handle

VisiSafe

- Positive contact indication
- Uimp: 6 kV
- Ui: 500 V
- Degree of pollution: level 3

- Pushbutton:
 - manual control: opening/closing
 - choice of operating modes

- Longer product service life due to:
 - good overvoltage withstand capacity: products designed to provide a high industrial performance level (degree of pollution, rated impulse withstand voltage and insulation voltage),
 - high limitation performances,
 - fast closure independent of the speed of resetting of the operating handle.

Legend

Ti24 interface

+24VDC	V DC power supply
Y3	Remote control by latched order
auto/OFF	Circuit-breaker state information
O/C	Control circuit state information (open/closed)
0 V	V DC power supply

Y1	Latched order control
Y2	Control by impulse-type
N	230 V AC power supply
P	
O/C	Control circuit state indication contact
auto/OFF	Circuit-breaker tripping indication contact

DB123765



DB123516



Reflex iC60H (curves C, D)

DBxxxxx



Country approval pictograms

IEC/EN 60947-2

The Reflex iC60 devices are integrated control circuit breakers which combine the following main functions in a single device:

- Remote control by latched and/or impulse-type order according to the 3 operating modes to be chosen by the user
- Circuit breaker, to provide:
 - circuit protection against short-circuit currents
 - circuit protection against overload currents
 - disconnection in the industrial sector

Resetting after a fault is performed manually, by the resetting handle.

The version with Ti24 allows direct interfacing of the Reflex iC60 with a PLC, to:

- Execute remote control (Y3)
- Indicate the state of the control circuit (O/C) and circuit-breaker state information (auto/OFF)

The Ti24 interface also allows fast, reliable connection of the Reflex iC60 to the Acti 9 Smartlink due to the prefabricated cables.

PB106239-40



PB106239-40



Alternating current (AC) 50 Hz

Ultimate breaking capacity (Icu) as per IEC/EN 60947-2

Ph/Ph (2P, 3P, 4P)	Voltage (Ue)		Service breaking capacity (Ics)
	220 to 240 V	380 to 415 V	

Reflex iC60H

Rating (In)	10 to 40 A	30 kA	15 kA	50 % of Icu
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Catalogue numbers

Reflex iC60 circuit breaker

Type	2P		3P		4P	
Rating (In)	Curve		Curve		Curve	
	C	D	C	D	C	D

Reflex iC60H

With Ti24 interface

10 A	A9C65210	A9C66210	A9C65310	A9C66310	A9C65410	A9C66410
16 A	A9C65216	A9C66216	A9C65316	A9C66316	A9C65416	A9C66416
25 A	A9C65225	A9C66225	A9C65325	A9C66325	A9C65425	A9C66425
40 A	A9C65240	-	A9C65340	-	A9C65440	-
Width in 9 mm modules	9		11		13	

Reflex iC60H (curves C, D) (cont.)

DB123517

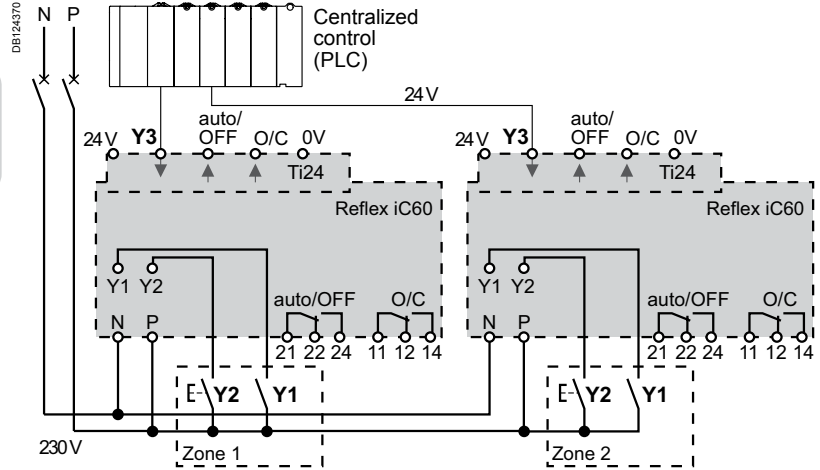


■ Operating state indicator lamp

■ Pushbutton for:
□ mode selection
□ opening/closing manual control

Remote control is possible by 3 operating modes to be set using the pushbutton on the front panel.

Three types of control: Y1, Y2, Y3



Operating modes

Mode 1: Reflex iC60 opening/closing, locally or centrally controlled

- The opening/closing orders come from various control points, and they are taken into account in their order of arrival
- Y1: latched order local control
- Y2: impulse-type local control
- Y3: latched order centralised control

Mode 2: Reflex iC60 opening/closing, possible inhibition of local impulse-type control

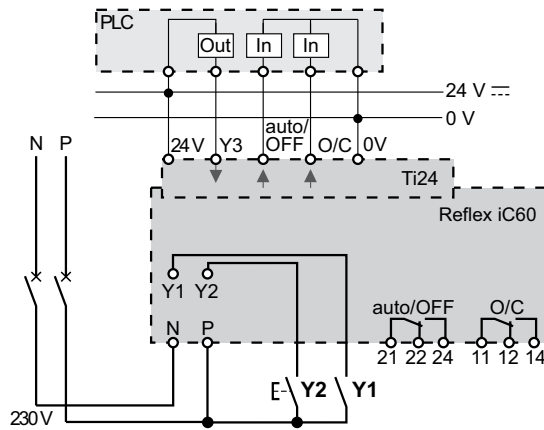
- Y1 is used to inhibit Y2
- Y1: local opening/Y2 inhibition latched order control
- Y2: impulse-type local opening/closing control
- Y3: latched order centralised opening/closing control

Mode 3: Reflex iC60 opening/closing, possible inhibition of centralised latched order control

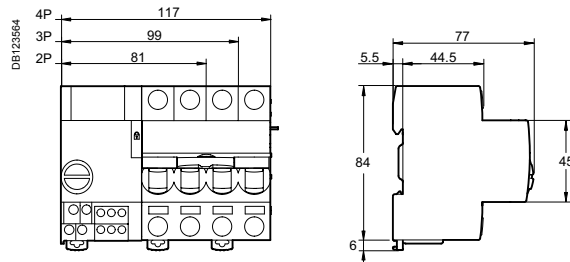
- Y1 is used to inhibit Y3
- Y3 inhibition local latched order control
- Y2: impulse-type local opening/closing control
- Y3: latched order centralised opening/closing control

Reflex iC60 with Ti24 interface

- Mode 1
- Mode 2
- Mode 3



Dimensions (mm)



Weight (g)

Circuit breaker

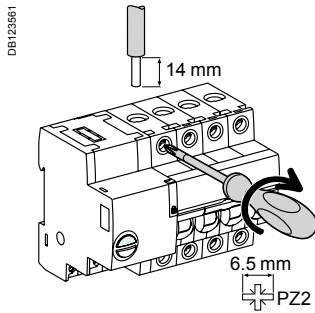
Type	Reflex iC60
2P	480
3P	620
4P	750






Table of modes

	Mode 1	Mode 2	Mode 3
Reflex iC60 with interface Ti24	■ Possible mode	■ Possible mode	■ Default mode

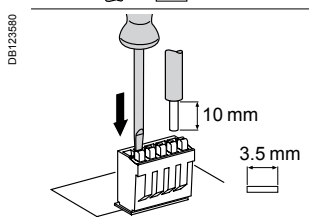
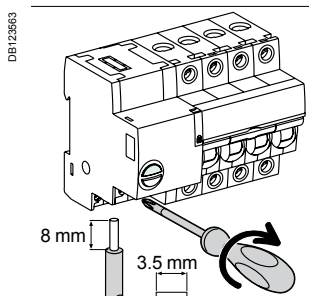
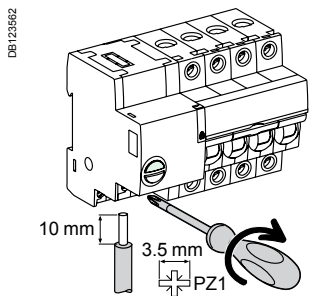
Reflex iC60H (curves C, D) (cont.)




Power connection



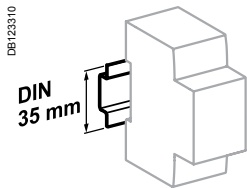
Terminal	Rating	Tightening torque	Without accessories		With accessories			
			Copper cables		Al terminal 50 mm ²	Screw-on connection for ring terminal	Multi-cable terminal	
			Rigid	Flexible or with ferrule			Rigid cables	Flexible cables
								
Power	10 to 25 A 40 to 63 A	2 N.m 3.5 N.m	1 to 25 mm ² 1 to 35 mm ²	1 to 16 mm ² 1 to 25 mm ²	- 50 mm ²	∅ 5 mm	- 3 x 16 mm ²	- 3 x 10 mm ²

Control connection

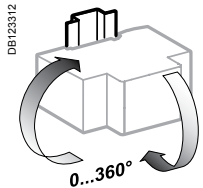


Terminal	Tightening torque	Without accessories		
		Copper cables		
		Rigid	Flexible	Flexible with ferrule
				
Power supply (N/P) Inputs (Y1/Y2)	1 N.m	1 to 10 mm ²	1 to 6 mm ²	1 to 4 mm ²
Outputs (O/C, auto/OFF)	0.7 N.m	1 to 2.5 mm ²	1 to 2.5 mm ²	1 to 1.5 mm ²
Ti24 interface	Spring-loaded terminals	0.5 to 1.5 mm ²	0.5 to 1.5 mm ²	0.5 to 1.5 mm ²

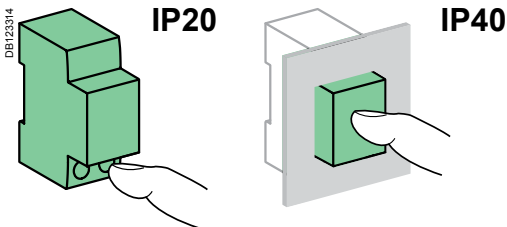
Reflex iC60H (curves C, D) (cont.)



Clip on DIN rail 35 mm.



Indifferent position of installation.



Technical data

Control circuit

Supply voltage (Ue) (N/P)		230 V AC - 50 Hz
Control voltage (Uc)	Inputs (Y1/Y2)	230 V AC - 5 mA
	Input (Y3)	24 V DC - 5.5 mA
Min. duration of control impulse (Y2)		≥ 250 ms
Response time (Y2)		≤ 200 ms
Consumption		≤ 1 W
Inrush consumption		< 1000 VA
Length of control wires	Inputs (Y1/Y2)	Cable: 100 m Wires in a sheath: 500 m
	Input (Y3)	500 m
Inrush current at 230 V - 50 Hz	2P	4.2 Å
	3P	8.2 Å
	4P	16.2 Å

Power circuit

Max. working voltage (Ue)		400 V AC
Insulation voltage (Ui)		500 V
Rated impulse withstand voltage (Uimp)	Set to Disconnected	6 kV
	Set to Ready	4 kV
Thermal tripping	Reference temperature	50°C
Magnetic tripping	Curve B	4 In ± 20 %
	Curve C	8 In ± 20 %
	Curve D	12 In ± 20 %
Overvoltage category (IEC 60364)		IV
Temperature derating		Consult us

Indication / Remote control

Potential-free changeover contact outputs (O/C, auto/OFF)	Min.	24 V DC - 100 mA
	Max	230 V AC - 1 A

Ti24 interface (as per IEC 61131)

Outputs (O/C, auto/OFF)	Ti24 interface	24 V DC - 100 mA max
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Endurance (O-C)

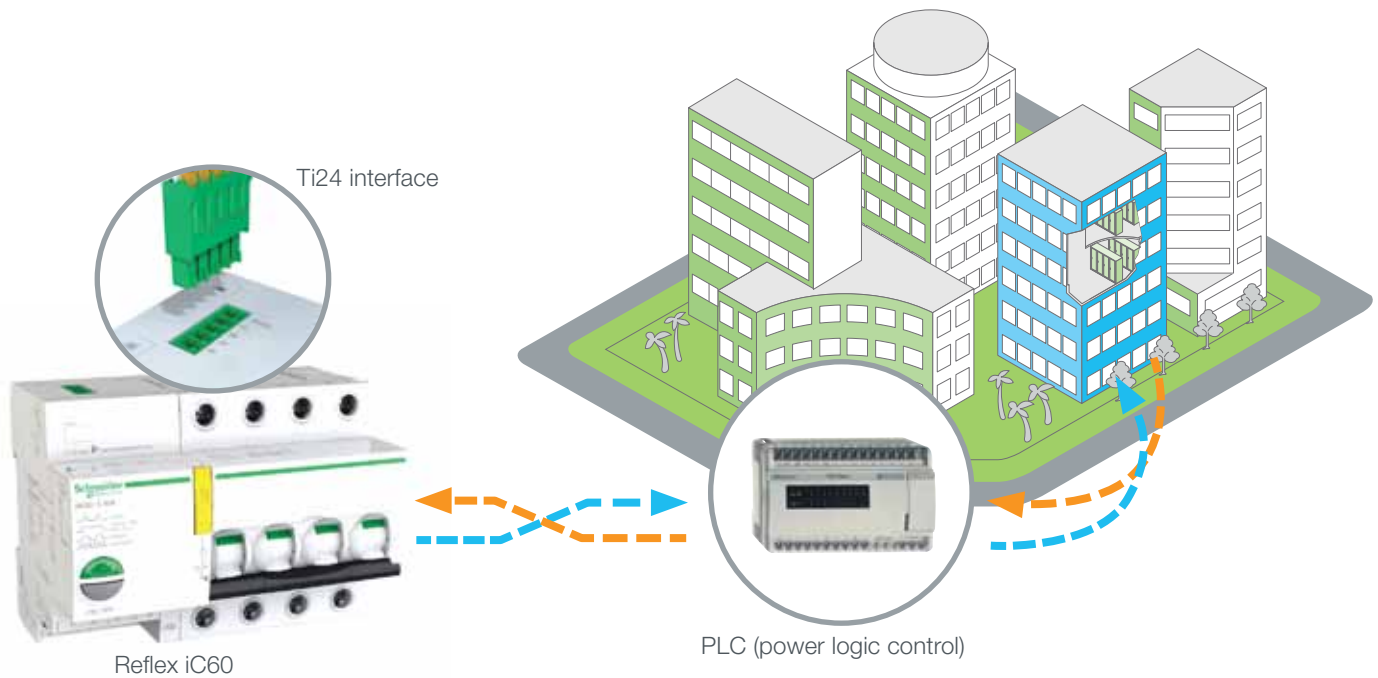
Electrical	AC1 - AC7a	Up to 50,000 cycles ⁽¹⁾
	AC5a - AC5b	Up to 15,000 cycles ⁽¹⁾
	AC7c	Up to 20,000 cycles ⁽¹⁾
Mechanical		50,000 cycles

Additional characteristics

Degree of protection (IEC 60529)	Device only	IP20
	Device in a modular enclosure	IP40 Insulation class II
Degree of pollution		3
Operating temperature		-25°C to +60°C
Storage temperature		-40°C to +85°C
Tropicalization		Treatment 2 (relative humidity of 93 % at 40°C)
Immunity to voltage dips		IEC 61000-4-11 class III
Immunity to power supply frequency variations		IEC 61000-4-28 and IACS E10
Immunity to harmonics		IEC 61000-4-13 class 2
Immunity to electrostatic discharges	Air	8 kV, IEC 61 000-4-2
	Contacts	4 kV, IEC 61 000-4-2
Immunity to stray magnetic fields		10 V/m up to 3 GHz, IEC 61000-4-3
Immunity to fast transients		4 kV from 5 to 100 kHz, IEC 61000-4-4
Immunity to shock waves		IEC 61000-4-5
Immunity to power frequency magnetic fields		10 V from 150 kHz to 80 MHz, IEC 61000-4-6
Immunity to network frequency magnetic fields		Level 4 30 A/m to IEC 61000-4-8 and IEC 61000-4-9
Conducted emissions		CISPR 11/22
Radiated emissions		CISPR 11/22

(1) See the derating table according to the load types and ratings

Ready to be connected



The Reflex iC60 is the perfect all-in-one solution for remote load management of tertiary buildings, industrial plants and interior and exterior public infrastructure lighting applications.

Make the most of your energySM

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