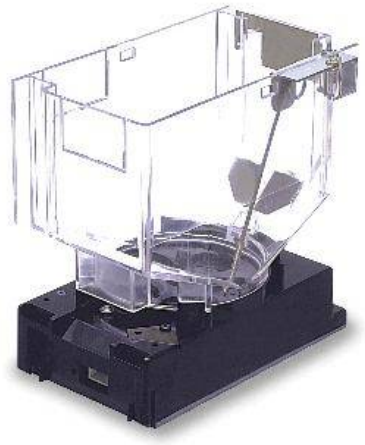
Mini-Hopper Type 85A



Installation and Operation Manual

Introduction

The Mini-Hopper Type 85Ax is a high quality single denomination coin dispensing unit. A unique 'jam-free'-Rotary-Disk with an inner ring and the simple mechanical design ensures high reliable, trouble-free and high speed operation.

Current types : 85A **a** – Ex (1 c - 1 € coins) , 85A **b** – Ex (for 2 € coins)

85A x –	**E1**	Standard parallel interface, 24V operation
85A x –	**E2**	for outdoor use, 12-24V operation, coated PCB
85A x –	**EC1**	Serial cctalk interface, 24V operation

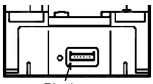
Operation

The Mini-Hopper is available with 2 interfaces: Standard parallel and optionally cctalk.
Standard parallel interface (Type 85Ax-Ex): Coin payout starts by applying 5-24V to the 'Motor Control Inputs'. Pulses indicate the amount of coins dispensed. To stop payout, the control signal must be deactivated within 2mS after reaching the desired number of dispensed coins. The Mini-Hopper has a build-in intelligent control to prevent **any miscounts** and motor damage. This requires to keep the 24V DC supply connected for at least 100ms after operation, or permanently.
cctalk interface (Type 85Ax-ECx): The hopper is completely controlled via one-wire serial intelligent communication.

Installation

The Mini-Hopper can be mounted directly with 4x M4 screws from the bottom.
Optionally a 'Snap-In'-base-plate is available.

Electrical Interface



*** CAUTION: Reversing the polarity of the supply inputs will damage the device !**

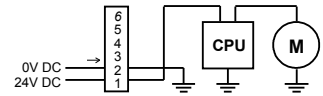
Pinout: Standard Parallel

1	24V supply
2	0V supply
3	Control - (0V)
4	Control + (+5-24V)
5	Count Out (active HI)
6 (*)	Count Out (active LO)

Pinout: cctalk Serial

1	nc
2	nc
3	cctalk Data (RtxD)
4	nc
5	0V supply
6	24V supply

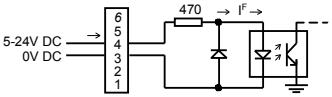
Power Supply (24V DC +/-10%):



I Standby = 12.5 mA , I Operating = 500 mA , I max. = 1.5 A

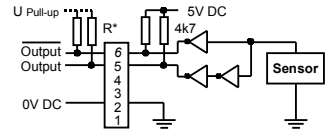
Permanent supply is recommended !

Motor Control Input (5-24V DC):



I^F at 5V = 5.8 mA , I^F at 12V = 16 mA , I^F at 24V = 35 mA

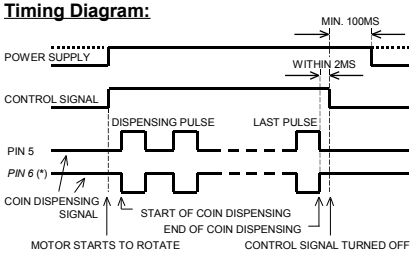
Coin Count Output (5-24V DC):



6 (*) = $\overline{\text{Output}}$ = Low Active
5 = Output = High Active

U Pull-up = 5-24V DC , I max. = 100 mA

Timing Diagram:



(!) Only signals > 25ms are valid coin count pulses !

cctalk-commands:

Simple Poll	$FE	(d254)
Req. Equipment Category ID	$F5	(d245)
Request Product Code	$F4	(d244)
Request Build Code	$C0	(d192)
Request Manufacturer ID	$F6	(d246)
Request Software Version	$F1	(d241)
Read Opto States	$EC	(d236)
Request Comm Version	$04	(d004)
Reset Device	$01	(d001)
Request Serial Number	$F2	(d242)
Enable Hopper	$A4	(d164)
Dispense Hopper Coin	$A7	(d167)
Request Hopper Status	$A6	(d166)
Test Hopper	$A3	(d163)
Emergency Stop	$AC	(d172)
Req. Hopper Dispense Count	$A8	(d168)
Address Poll	$FD	(d253)
Address Class	$FC	(d252)
Address Change	$FB	(d251)
Address Random	$FA	(d250)

(*): ***Pin 6*** not available on all models.

Changing Mini-Hoppers coin denomination:

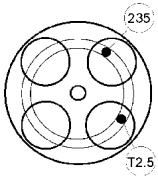
5 Rotary-Disks and 4 different Coin-Guides are covering all Euro coins :

Euro-Coins	*Disk*	*Guide*	
1 Cent	170 / T1.9	**16** / 26	
2 Cent	205 / T1.7	**19** / 24	
5 Cent	220 / T1.9	**21** / 22	
10 Cent	205 / T2.1	**20** / 23	
20 Cent	235 / T2.5	**22** / 21	
50 Cent	265 / T2.5	19 / **24**	
1 Euro	235 / T2.5	20 / **23**	
2 Euro (*)	265 / T2.5	16 / **26**	

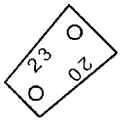
(*) 2 Euro coins with type 85A **b** –Ex only

Example:
To set for 1 Euro coins,
following parts are required :

Rotary-Disk
'235 / T2.5'

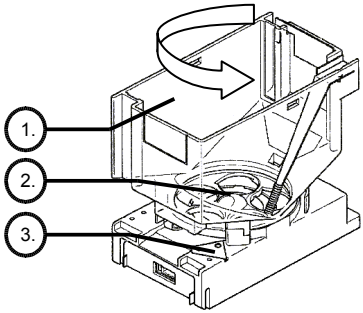


Coin-Guide
'20 / 23'

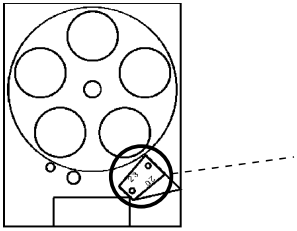


Assembly:

1. Remove the *Hopper-Bowl* by turning counter clockwise.
2. Exchange *Rotary-Disk* (no tools required)
3. Unscrew *Coin-Guide* (Phillips-Screw-Driver)
4. Mount new *Coin-Guide* as described below
5. Mount *Hopper-Bowl*



How to mount the *Coin Guide*:



Example:
Mount this way to set:

1 Euro coins
(Size 23)

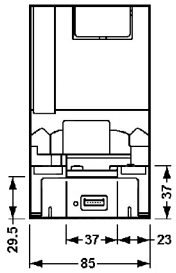
10 Cent coins
(Size 20)

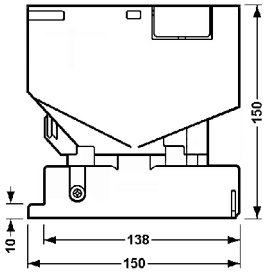
Specifications

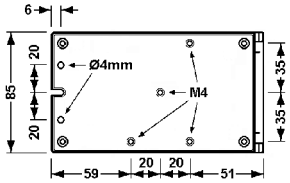
Dimension	150 (H) x 85 (W) x 150 (L) mm
Coin Diameter	14.0-24.5 mm (85A **a**) , 24.0-29.0 mm (85A **b**)
Dispensing Speed	Approx.450 coins/min (*)
Counting Method	Optical Sensor
Operating Voltage	24V DC (85Ax-**E1**, **E2**, **EC1**) , 12V DC (85Ax-**E2**)
Max Current	1.5 A (*)
Weight	570 g
MTBF	$1x10^6$
Hopper capacity (with Extension Tank)	1**c** = 1500 (2600) , 2**c** = 1100 (1900) 5**c** = 850 (1500) , 10**c** = 850 (1500) 20**c** = 600 (1000) , 50**c** = 450 (800) 1**€** = 500 (850) , 2**€** = 450 (800)

(*) at 24VDC±10% operation

Outline Drawing and Mounting



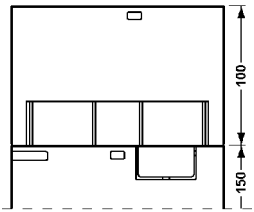




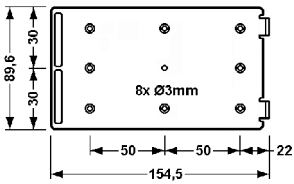
Option:
Extension Tank

Total Capacity:
(Hopper+Extension)

1 c = 2600
2 c = 1900
5 c = 1500
10 c = 1500
20 c = 1000
50 c = 800
1 € = 850
2 € = 800



Option:
Snap-in Base



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