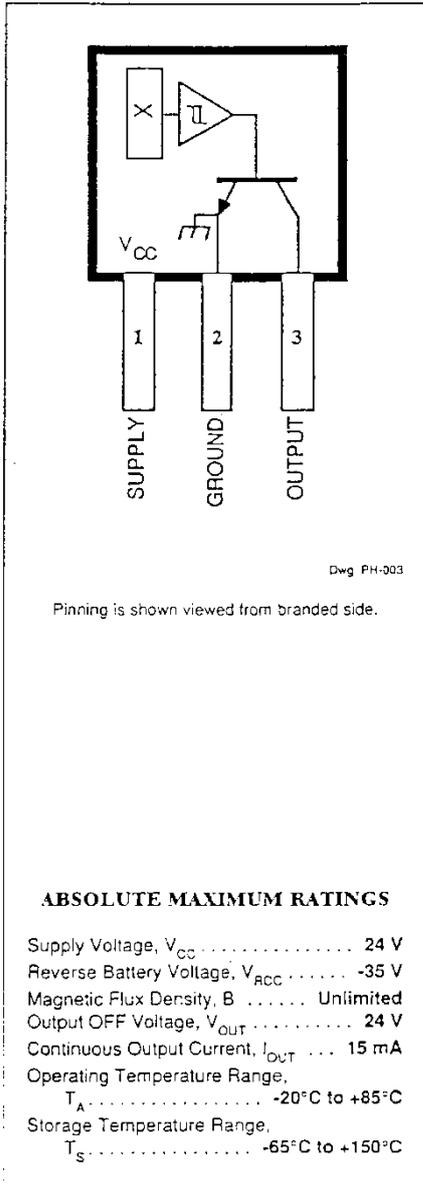


# Capteurs à effet Hall



These Hall effect latches are temperature-stable and stress-resistant sensors especially suited for electronic commutation in brushless dc motors using multipole ring magnets. Each device includes a voltage regulator, quadratic Hall voltage generator, temperature compensation circuit, signal amplifier, Schmitt trigger, and an open-collector output on a single silicon chip. The on-board regulator permits operation with supply voltages of 4.5 to 24 volts. The switch output can sink 10 mA. With suitable output pull up, they can be used directly with bipolar or MOS logic circuits.

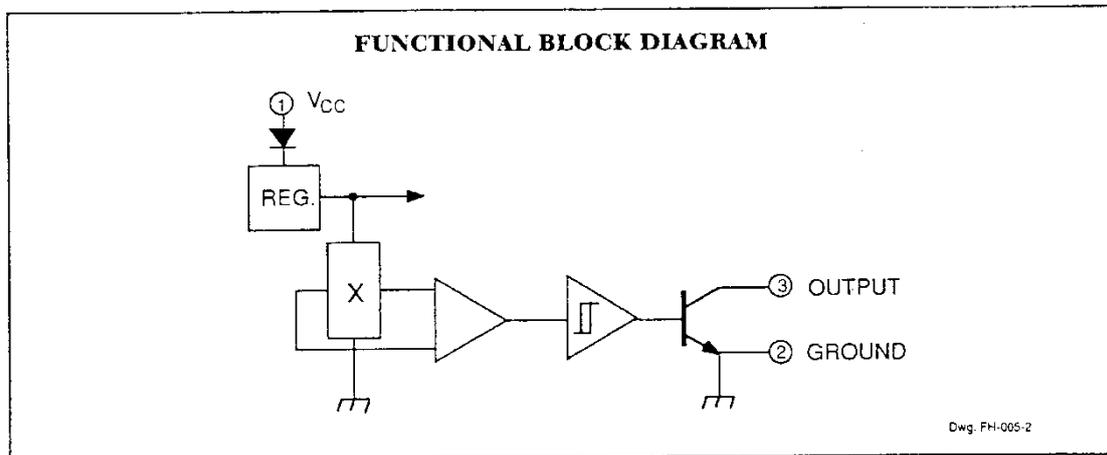
The four package styles available provide a magnetically optimized package for most applications. Suffix LT is a surface-mount SOT 89 (TO-243AA) package; suffixes LL, U, and UA feature wire leads for through-hole mounting.

## FEATURES

- Symmetrical Response
- 4.5 V to 24 V Operation
- Open-Collector Output
- Reverse Battery Protection
- Activate With Small, Commercially Available Permanent Magnets
- Solid-State Reliability ... No Moving Parts
- Small Size
- Superior Temperature Stability
- Resistant to Physical Stress

**NEWTEK**  
 8, rue de l'Estérel  
 Silic 583  
 94663 RUNGIS CEDEX  
 Tél. : 46.87.22.00  
 Télax : 263046  
 Fax : 46.87.80.49

Always order by complete part number, e.g., UGN3175LL.  
 See Magnetic Characteristics table for differences between devices.



**ELECTRICAL CHARACTERISTICS at  $T_A = +25^\circ\text{C}$ ,  $V_{CC} = 4.5\text{ V to }24\text{ V}$   
(unless otherwise noted).**

Characteristic	Symbol	Test Conditions	Limits			
			Min.	Typ.	Max.	Units
Supply Voltage	$V_{CC}$	Operating	4.5	—	24	V
Output Saturation Voltage	$V_{OUT(SAT)}$	$V_{CC} = 24\text{ V}$ , $I_{OUT} = 10\text{ mA}$ , $B > B_{OP}$	—	200	300	mV
Output Leakage Current	$I_{OFF}$	$V_{OUT} = 24\text{ V}$ , $B < B_{RP}$	—	0.05	5.0	$\mu\text{A}$
Supply Current	$I_{CC}$	$V_{CC} = 4.5\text{ V}$ , Output Open	—	5.0	10	mA
Output Rise Time	$t_r$	$V_{CC} = 12\text{ V}$ , $R_L = 1.1\text{ k}\Omega$ , $C_L = 20\text{ pF}$	—	0.04	2.0	$\mu\text{s}$
Output Fall Time	$t_f$	$V_{CC} = 12\text{ V}$ , $R_L = 1.1\text{ k}\Omega$ , $C_L = 20\text{ pF}$	—	0.18	2.0	$\mu\text{s}$

**MAGNETIC CHARACTERISTICS in gauss;  $V_{CC} = 4.5\text{ V to }24\text{ V}$ .**

Characteristic	Part Number*	$T_A = +25^\circ\text{C}$			$T_A = -20^\circ\text{C to }+85^\circ\text{C}$		
		Min.	Typ.	Max.	Min.	Typ.	Max.
Operate Point, $B_{OP}$	UGN3175	25	—	170	15	—	180
	UGN3177	50	—	150	25	—	150
Release Point, $B_{RP}$	UGN3175	-170	—	-25	-180	—	-15
	UGN3177	-150	—	-50	-150	—	-25
Hysteresis, $B_{hys}$	UGN3175	100	200	—	80	180	—
	UGN3177	100	200	—	50	180	—

NOTE: As used here, negative flux densities are defined as less than zero (algebraic convention)  
\* Complete part number includes a suffix denoting package type (LL, LT, U, or UA).